Buzzaround XL
Service Guide

Model GB146

Model GB116

This Service Guide contains:
Troubleshooting
Replacement Instructions
Illustrated Parts Breakdown

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BUZZAROUND XL NOMENCLATURE

1 - Seat Assembly with arms
2 - Control Panel
3 - Battery Pack
4 - Rear Section
5 - Freewheel Lever
6 - Drive Wheel
7 - Front Section
8 - Controller (located inside panel under frame)
9 - Removable Carpet
10 - Front Wheel
11 - Tiller
12 - Front Basket
13 - Seat Post
14 - Detent Pin
15 - Lockup Handle

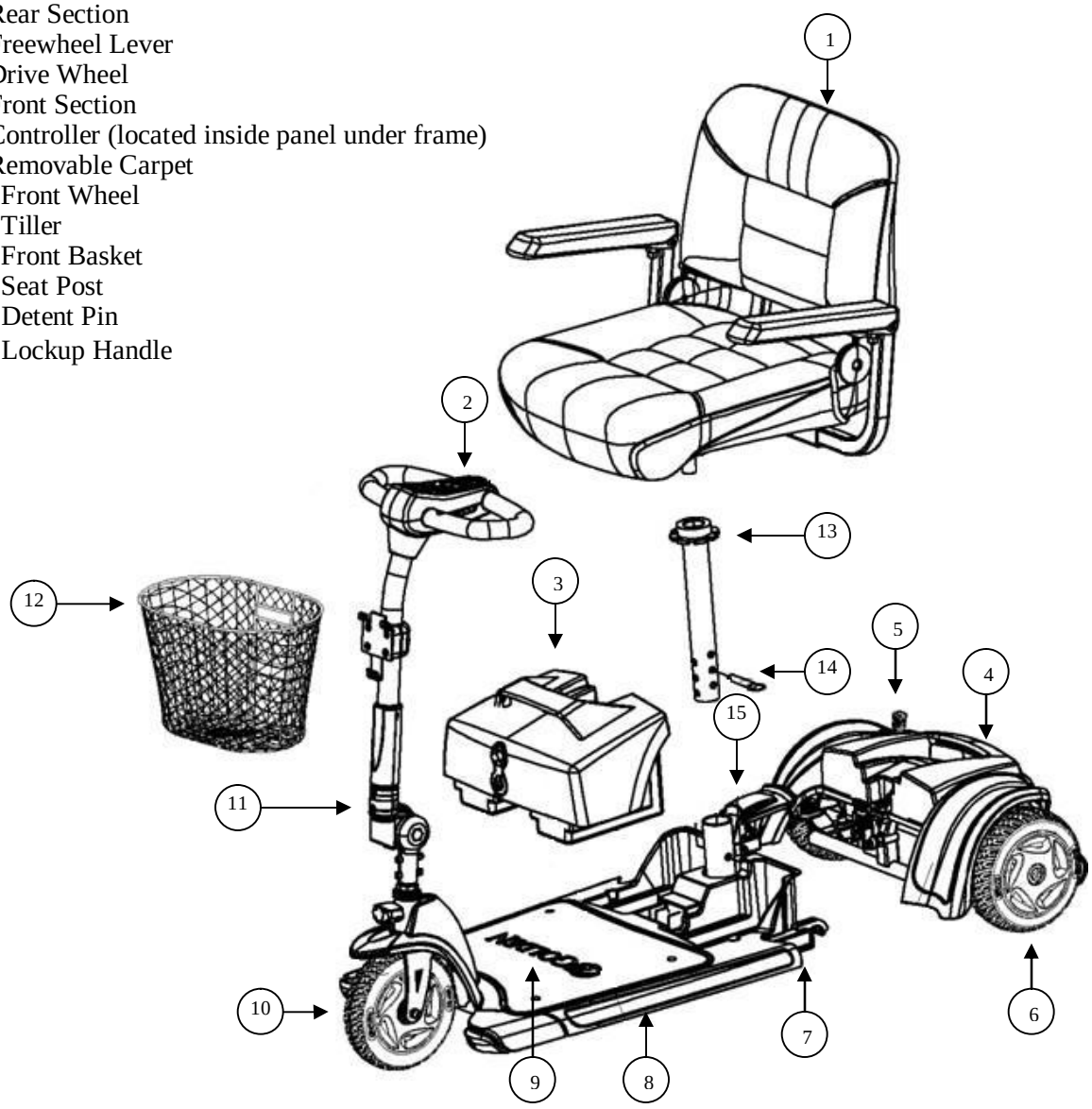

Figure 1. Buzzaround XL (Model GB116)

Contact Information

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401 Bridge Street
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ABOUT THE BUZZAROUND XLÊ SERVICE GUIDE

This service guide provides you with the information necessary to troubleshoot the Golden Technologies Buzzaround XL GB116/GB146. The troubleshooting scenarios in this manual consist of procedures that enable you to systematically trace and correct faults in the system. Appendices A and B include instructions on how to measure voltage and continuity with a multimeter. Appendix C includes a copy of ýgure 11 that may be printed separately. Appendix D contains þow charts of the more complex troubleshooting procedures.

Before troubleshooting, check the following:

- Å ***Make sure that the circuit breaker is reset.***
- • ***Visually check terminals for corrosion. Check wires for missing insulation.***
- • ***Make sure that the batteries are fully charged and are in good working order.*** When possible, keep sets of known good batteries of various ratings in your shop at all times. The Buzzaround XL uses either two (2) 12AH or (2) 18AH batteries. Problems that surface during troubleshooting are often due to the fact that the batteries are not fully charged or can not hold their charge.
- Å ***Make sure that the electrical connections are secure.*** Unplug the connectors and make sure all of the pins are seated properly. Push the pins back into the connector housing if necessary. Make sure that the battery terminals are tight.

NOTE: If you get to a point during troubleshooting where you cannot continue, call tech support at 800-624-6374.

BUZZAROUND XL COMPONENTS

The Buzzaround XL is a battery-operated scooter with a controller that monitors the system and beeps when it detects a fault in the system. The Buzzaround XL was designed to operate within a range of between 18 - 24 volts (V) of direct current (DC).

The Buzzaround XL control system is made up of the following components:

NOTE: The number after the component refers to the components position on figure 11 on page 10.

- Å Circuit Breaker (1)
- Å 12V Batteries (2 and 3)
- Å Battery Harness (4)
- Å Power Harness (5)
- Å Dynamics R-Series Controller (6)
- Å Main Harness (7)
- Å Front Intermediate Motor Harness (8)
- Å Rear Intermediate Motor Harness (9**)**
- Å Motor/Brake Assembly (10)
- Å Brake (11)
- Å Control Panel (12) includes Key Switch and Speed Control
- Å Throttle Pot (13)
- Å Charger Harness (14)
- Å Off-Board Battery Charger ï (not shown in illustration)

NOTE: Parts and service must be authorized by the Golden Technologies Service Department. Unauthorized parts or service may void the warranty. For more information, contact the Golden Technologies Service Department at 800-624-6374 or parts@goldentech.com.

Component: Circuit Breaker (1)
Location: Mounted on the Battery Pack. **See figure 2.**
Function: Protects battery circuit from current overload. When the current draw exceeds the breaker rating, the circuit breaker will open.
Connections: The circuit breaker is connected to the positive (+) terminal on one battery and the negative (-) terminal on the other.
Failure Signs: Opens repeatedly. May indicate failed circuit breaker or short in the wiring. May also open if the motors are overloaded (from excessive weight, excessive uphill driving, etc).
Test: Measure the resistance across the circuit breaker and the wires that connect the circuit breaker to the batteries.
Expected reading: Less than 10 ohms.
Serviceable: ***Circuit breaker must be replaced with exact current rating.***

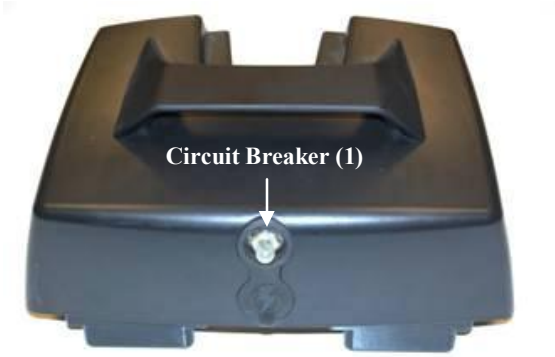


Figure 2. Battery Box

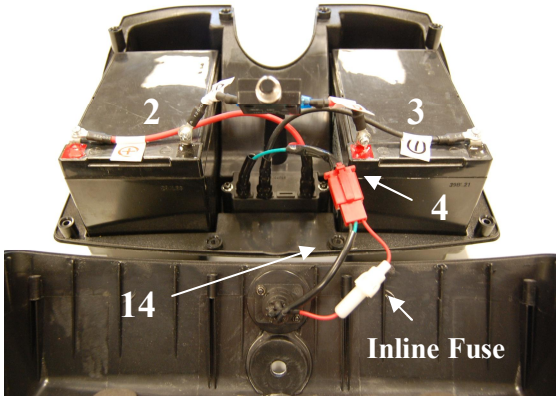


Figure 3. Inside Battery Pack

Component: 12VDC Batteries (2 and 3)
Location: Inside the battery pack. **See figure 3.**
Function: Supply 24VDC to the motor and/or accessories (12VDC x 2).
Connections: Connected in series. The positive (+) terminal of one battery is connected to the negative (-) of the other at the circuit breaker (1) and at the battery harness (4c and 4d). Refer to figure 11 on page 10.
Failure Signs: Batteries drain quickly. Scooter runs slowly or not at all. Batteries will not charge, but charger is working properly. Beep Code #1 or #2.
Tests: Fully charge the batteries ýrst and load test. Make sure charging system is working. See Battery Charging Test. Make sure the contacts are not corroded. See figure 4 below and ýgure 19 on page 14 for quarter test.
Expected Readings: 12 - 14VDC each when fully charged.
Serviceable: Replace batteries as necessary.

Component: Battery Harness (4)
Location: Inside the battery pack. **See figure 3.**
Function: Connects the batteries to the Power Harnesses (5). Provides over current protection from the battery charger through a 3-amp inline fuse.
Connections: Connected to the power harness through 4a.
Connected to the charger harness through 4b.
Connected to the batteries through 4c (+) and 4d (-).
Refer to figure 11 on page 10.

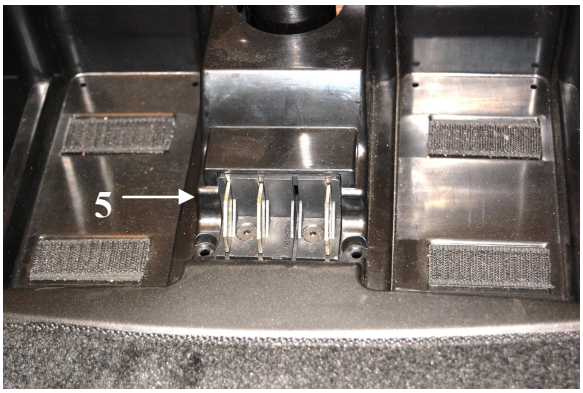


Figure 4. Scooter Battery Connection

Failure Signs: Corroded wires may cause the batteries not to work properly. Make sure connector pins are seated properly. Batteries will not charge if the inline fuse is blown.
Tests: Test the harness for continuity. Test the fuse for continuity.
Expected Readings: Less than 10 ohms.
Serviceable: Replace the harness as necessary. ***Replace inline fuse with exact type and rating.*** **See figure 3.**

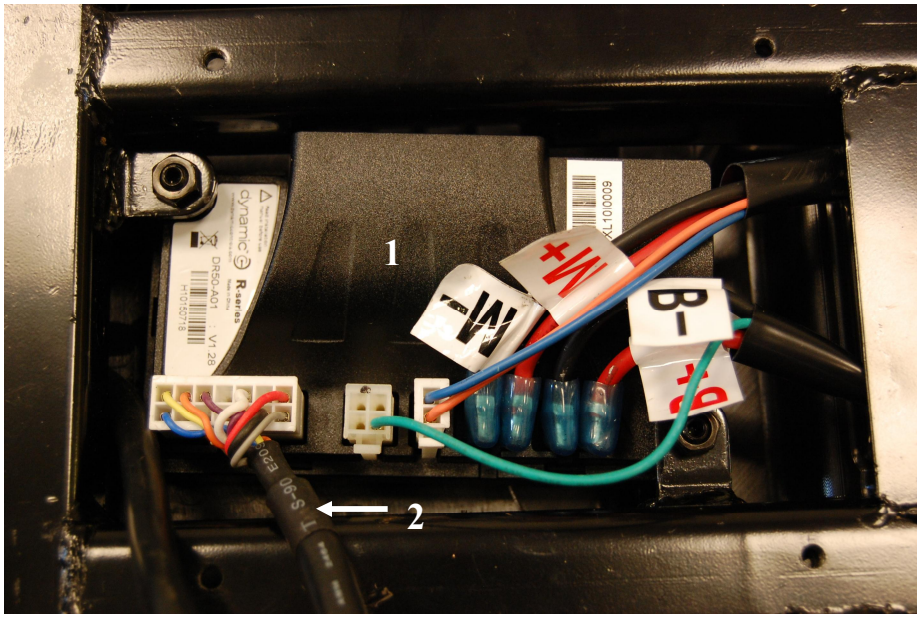


Figure 5. Controller

Component: Power Harness (5)
Location: Mounted to the front frame - under the battery pack. **See #5 on figure 4.**
Function: Connects the battery pack to the controller.
Connections: Connects to the battery pack (4a). Connects to the controller 5b (inhibit), 5c (Bat -), and 5d (Bat +). Refer to figure 11 on page 10.
Failure Signs: Charger is on and connected to the battery pack and the scooter runs (inhibit). No power to the controller.
Tests: Test harnesses for continuity. Check connectors. Make sure the contacts are not corroded and are seated properly.
Expected Readings: Continuity (less than 10 ohms).
Serviceable: Replace as necessary.

Component: Controller (6)
Location: Underside of the frame, inside cover. **See #1 on figure 5.**
Function: Controls and monitors the system. Uses a series of beeps when something in the system is out of range.
Connections: Connected to the main harness (7a), the charger inhibit (5b), the motor brake (8b), the front intermediate motor harness negative (8c), the front intermediate motor harness positive (8d), the power harness negative (5c) and the power harness positive (5d). Refer to figure 11 on page 10.
Failure Signs: Beep Code #9. No power to the control panel or the motor.
Tests: Test for voltage coming into and out of the controller.
Expected readings: Battery voltage.
Serviceable: Replace as necessary.

Component: Main Harness (7)
Location: Inside the tiller and under the frame. **See #2 on figure 5.**
Function: Provides connectivity for the tiller components and the controller.
Connections: Connected to the controller (6) and the control panel (12b). Refer to figure 11 on page 10.
Failure Signs: Scooter will not run.
Tests: Test for voltage and continuity. Check connectors. Make sure the pins are not corroded and are seated properly.
Expected readings: Battery voltage. Continuity (less than 10 ohms).
Serviceable: Replace as necessary.

Component: Front Intermediate Motor Harness (8)
Location: Mounted on the front frame. **See figure 6.**
Function: Provides connectivity for rear intermediate motor harness and the controller.
Connections: Connected to the rear intermediate harness (9a) and the controller (6). Refer to figure 11 on page 10.
Failure Signs: Scooter will run slowly or not at all.
Tests: Test for voltage and continuity. Check connectors. Make sure the pins are not corroded and are seated properly.
Expected readings: Continuity (less than 10 ohms).
Serviceable: Replace as necessary.

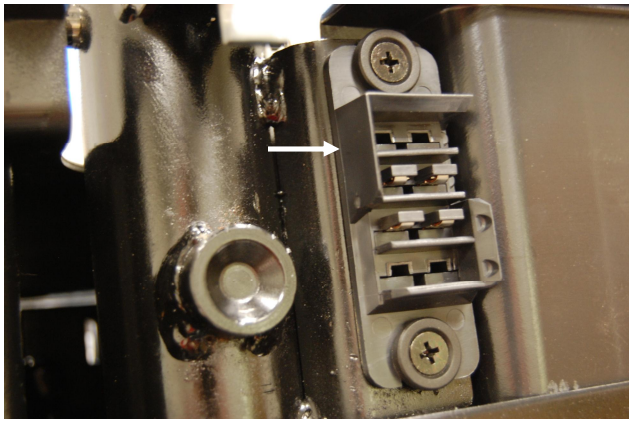


Figure 6. Front Intermediate Harness

Component: Rear Intermediate Motor Harness (9)
Location: Mounted on the rear frame. **See figure 7.**
Function: Provides connectivity for front intermediate motor harness and the motor/brake assembly.
Connections: Connected to the front intermediate motor harness (8a) and the motor/brake assembly (10a). Refer to figure 11 on page 10.
Failure Signs: Scooter will run slowly or not at all.
Tests: Test for voltage and continuity. Check connectors. Make sure the contacts are not corroded.
Expected readings: Continuity (less than 10 ohms).
Serviceable: Replace as necessary.

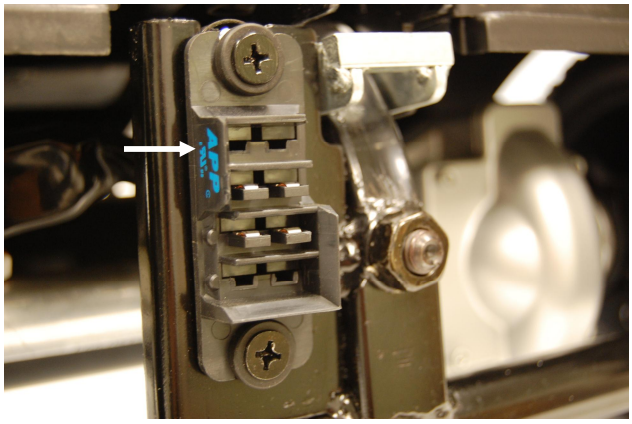


Figure 7. Rear Intermediate Harness

Component: Motor/Brake Assembly (10)
Location: Mounted on the transaxle. **See #1 on figure 8.**
Function: Drives the scooter.
Connections: Connected to the rear intermediate motor harness (9b) and the brake (11a). Refer to figure 11 on page 10.
Failure Signs: Scooter runs slowly or not at all.
Tests: Test for internal resistance in motor. Test motor wires for continuity. See Beep Codes #5 and #8.
Expected readings: Internal motor resistance is less than 50 ohms but not shorted.
Brake resistance is less than 80 ohms but not shorted.
Serviceable: Replace the motor/brake assembly.

Component: Brake (11)
Location: Mounted on the end of the motor. **See #2 on figure 8.**
Function: Keeps the motor from moving when the power is off.
Connections: Connected to the motor harness (10b). Refer to figure 11 on page 10.
Failure Signs: Scooter runs slowly or not at all.
Tests: Test for internal resistance. See Beep Code #5 on page 14 and Beep Code #8 on page 17.
Expected readings: Brake resistance is less than 80 ohms but not shorted.
Serviceable: Replace the park brake.

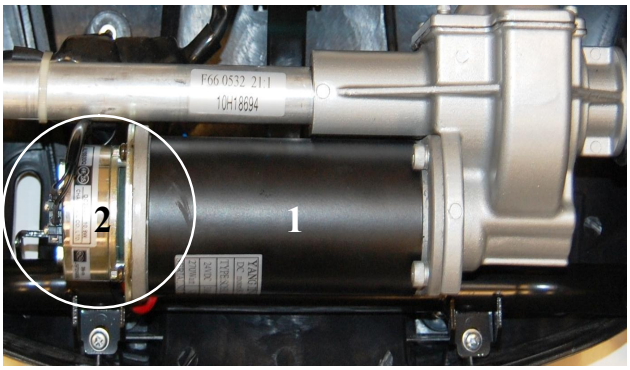


Figure 8. Motor/Brake Assembly

Component: Speed Pot
Location: Mounted on the control panel (12). **See #1 on figure 9.**
Function: The speed potentiometer (pot) uses variable resistance to control the speed of the scooter.
Connections: Connected to the main harness through the control panel harness.
Failure Signs: Beep Code #7
Tests: Call Tech Support
Expected readings: Depends on speed pot position.
Serviceable: No. Replace the control panel.

Component: Key Switch
Location: Mounted on the control panel (12). **See #2 on figure 9.**
Function: Completes the circuit to provide power to the motor.
Connections: Connected to the main harness through the control panel harness.
Failure Signs: No power when the key is in the ON position.
Tests: Continuity when the key is in the ñONò position. Make sure the connector pins are seated properly.
Expected readings: Less than 10 ohms.
Serviceable: No. Replace the control panel.

Figure 9. Control Panel (Back)

Component: Throttle Pot (13)
Location: Under the control panel. **See #1 on figure 10.**
Function: The throttle pot (potentiometer) uses variable resistance to control speed and direction of travel by varying voltage.
Connections: Connected to the control panel harness (12a). Refer to figure 11 on page 10.
Failure Signs: Beep Codes #6 and #7.
Tests: Test resistance across the pins 1, 2, and 3 and on 13a.
Expected readings: Depends on direction of deþection.
Serviceable: Replace as necessary.

Component: Charger Harness (14)
Location: Two locations. Inside the battery pack. **See #14 on figure 3 on page 5.** Second charger harness located inside the tiller. **See figure 11 on page 10.**
Function: Connects the charger to the batteries.
Connections: Connected to the battery harness (4a) and the charger, not shown. Refer to figure 11 on page 10.
Failure Signs: Batteries will not charge.
Tests: Test for voltage and continuity. Check connectors. Make sure the pins are not corroded and are seated properly.
Expected readings: Continuity (less than 10 ohms).
Serviceable: Replace the harness as necessary.

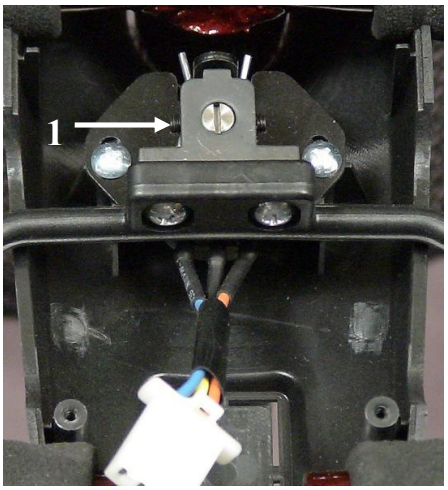


Figure 10. Throttle Pot

Component: Off-Board Battery Charger
Location: Stored inside a pouch on the seatback.
Function: Recharges batteries.
Connections: Connects to the charger port on the battery pack (14b) or the charger port on the tiller.
Refer to figure 11 on page 10. Charger port (14b) is located on the battery pack or on the tiller.
Connects the charger to the batteries. Tiller port connected to the batteries through the main harness.
Failure Signs: Charger power LED does not go on. Batteries will not charge.
Tests: Charger tests vary. Some chargers may be tested by measuring positive
and negative leads on the charger connector. Other chargers need to see battery voltage before charging.
Expected reading: Varies with charger.
See charger test on page 11.
Test charger harness and fuse for continuity.
Serviceable: Replace if necessary.

NOTE: Some Off-Board Battery Chargers may have a switch that enables them to be used with either 110 VAC or 230 VAC. This switch is typically located on the end of the charger. Some may also have a removable glass fuse. *Fuses must be replaced with exact type and rating.*

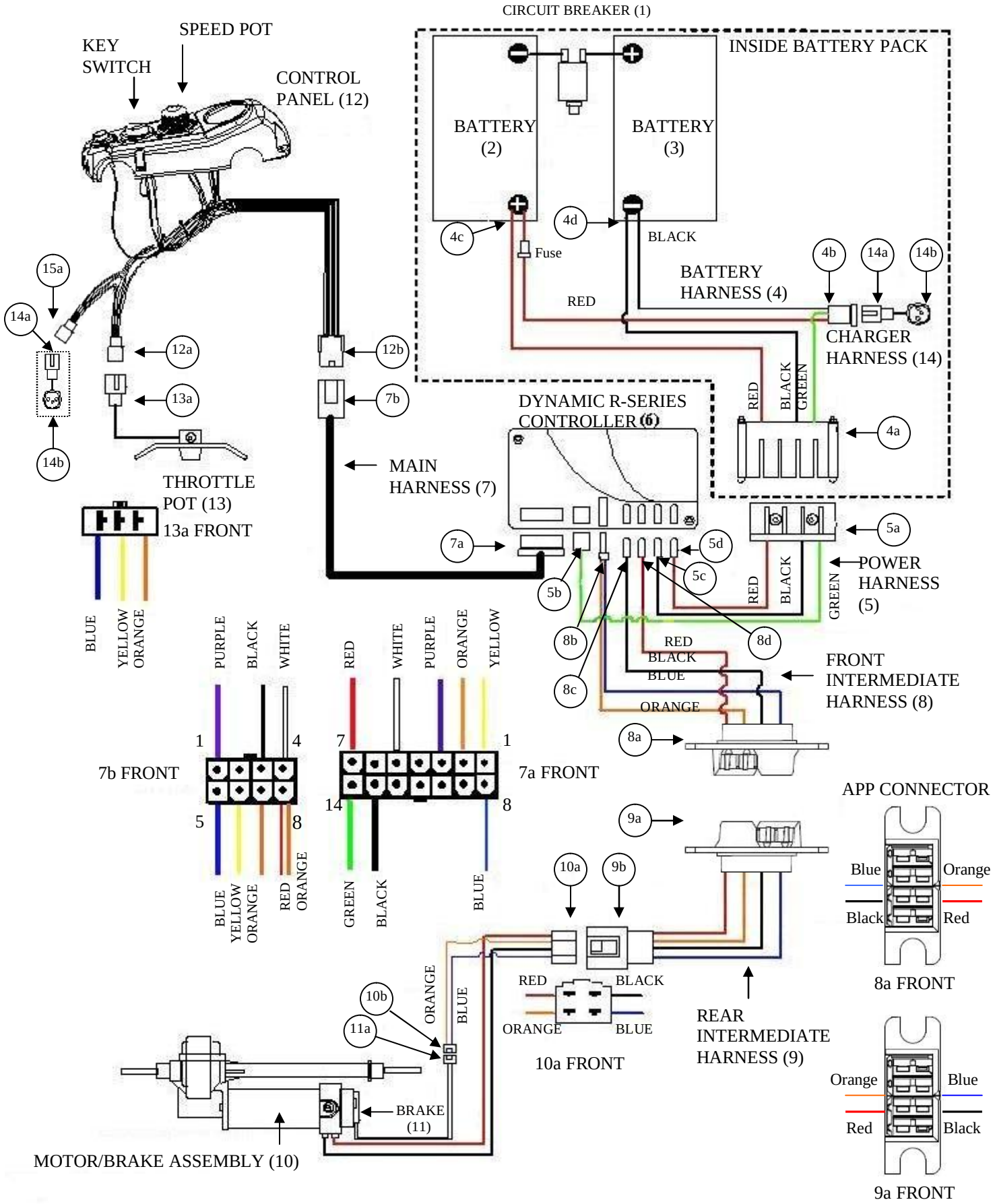


Figure 11. Buzzaround XL Wiring Diagram

SCENARIO 1: TURN THE KEY TO THE ON POSITION AND NO POWER

Put the key into the key switch and turn to the on position. There is no power to the control panel. The horn does not work and the battery condition meter does not work. Battery voltage travels from the batteries, through the controller and the key switch. The test below will verify that there is battery voltage at the batteries, the controller, the main harness, and the key switch. Refer to Appendix D on pages 29-39 for troubleshooting flow charts.

NOTE: Make sure that the batteries are fully-charged and connected properly. Refer to the battery connection diagram inside the battery pack. If the batteries are not fully charged and connected properly, then voltage measurements may produce faulty readings. Measure voltage across pin 1 and pin 3 on the battery pack to get total battery voltage (approximately 24VDC). Refer to ýgure 11 on page 10. If the batteries will not charge, go to ñScenario 2: Batteries will not charge.ò

Check Battery Voltage at Battery Pack.

1) Remove the battery pack.
2) Measure voltage across terminals 1 and 3 on connector 4a. **See figure 12.**
   - Å 24VDC (or battery voltage?) - Go to the next step.
   - Å More than 16VDC? - Try to recharge the batteries. Load test and replace if necessary.
   - Å 0VDC? - Check main circuit breaker (1) and battery harnesses for continuity (4a terminals 1 to 4c and 4a terminals 3 to 4d).

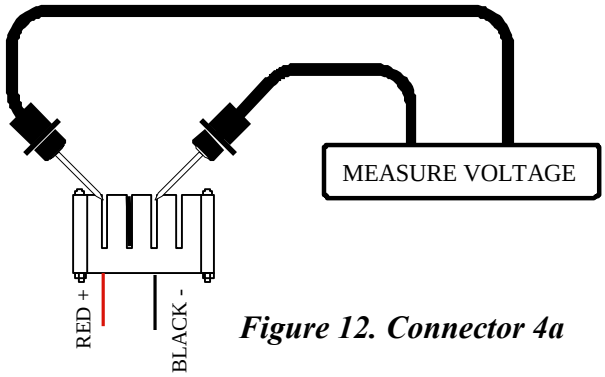


Figure 12. Connector 4a

Check Voltage at Power Harness.

3) Remove the four screws that fasten the controller cover to the underside of the scooter frame.
4) Remove the cover.
5) Disconnect the power harnesses (5c and 5d) from the controller.
6) Reinstall the battery pack.
7) Measure voltage across 5c and 5d. **See figure 13.**
   - Å 24VDC (or battery voltage?) - Go to the next step.
   - Å 0VDC? - Check power harness for continuity. Replace as necessary.

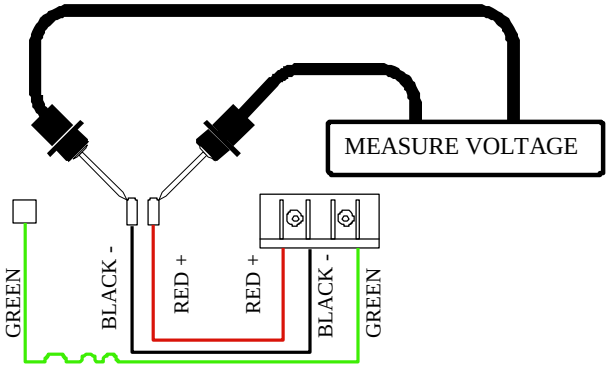


Figure 13. Connectors 5c and 5d

Check Voltage Out of Controller.

8) Reconnect the power harness to the controller.
9) Insert the multimeter probes into the terminal with the red wire (pin 7) and the terminal with the black wire (pin 13) on the **back of the main harness connector 7a. See figure 14.**
   - Å 24VDC (or battery voltage?) - Go to the next step.
   - Å 0VDC? - Replace the controller.

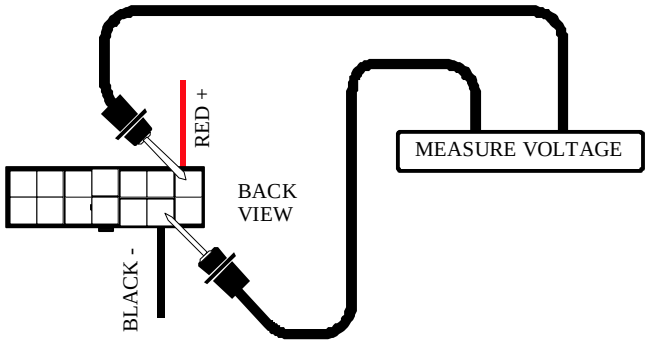


Figure 14. Back of Connector 7a

Check Voltage at Main Harness.

10) Open the control panel.
11) Disconnect the main harness (7b) from the control panel harness.
12) Measure voltage across pin 3 (black wire) and pin 8 (red wire) on connector 7b. **See figure 15.**
   - Å 24VDC (or battery voltage?) - Replace the control panel.
   - Å 0VDC? - Replace the main harness.

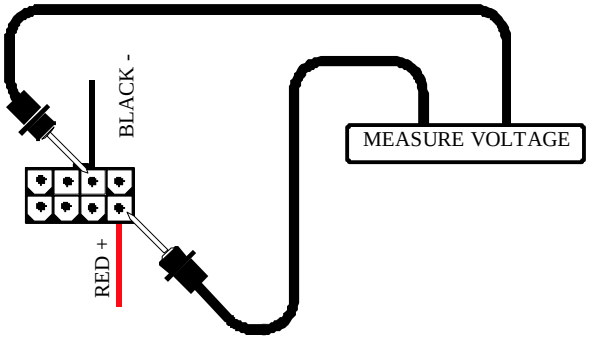


Figure 15. Connector 7b

SCENARIO 2: BATTERIES WILL NOT CHARGE

Most battery chargers need to ñseeò at least 16VDC at the charger port. Otherwise, they may not send a charging current to the batteries. This test will ensure that the battery voltage is making it to the charger port. You will need to check battery voltage and wiring harness continuity inside the battery pack.

Check Battery Charger Voltage.

1) Remove the battery pack.
2) Plug the charger into the charger port and then into a wall outlet.
3) Measure voltage across terminal 1 and terminal 3 on 4a. **See figure 16.** Does the voltage increase?
   - Å Yes? - Load test the batteries and replace as necessary.
   - Å No? - But there is voltage. If the voltage is lower than 16VDC, then replace the batteries. If the voltage is 16VDC or greater, then go to the next step.
   - Å No? - And there is no voltage. Open the battery pack and check the circuit breaker and the battery harnesses for continuity. Replace the individual components as necessary.

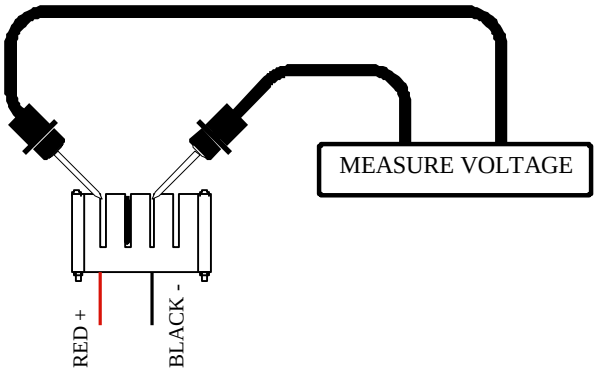


Figure 16. Connector 4a

4) Open the battery pack.

5) Check the battery harness fuse for continuity.
   - Å Less than 10 ohms? ï Replace the charger harness.
   - Å Open? ï Replace the fuse. **See figure 17.**

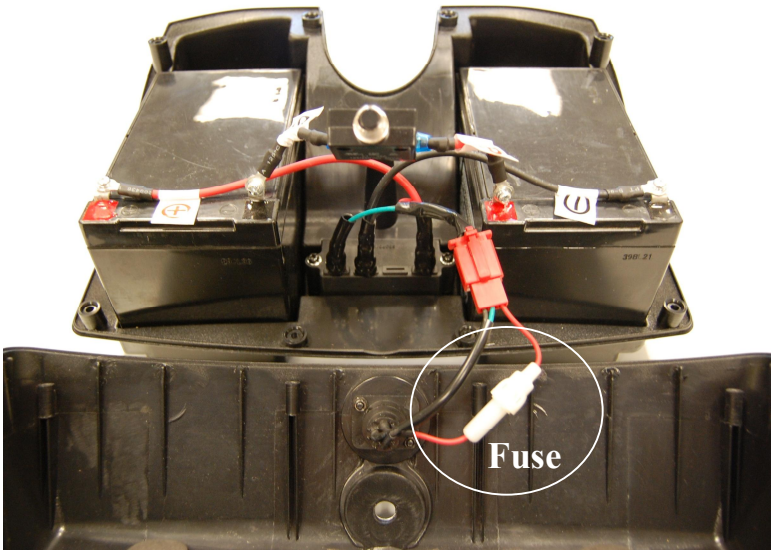


Figure 17. Battery Harness Fuse

BEEP CODES

The controller uses audible beeps to indicate the status of the system. When the controller notices that there is a malfunction in the system, it will beep a code when the power is on. For example, when it beeps ýve times and stops that indicates beep code #5 ï Brake Fault.

The following beep codes are used to help diagnose system errors:
Beep Code #1 ï Batteries Low (Scooter will operate)
Beep Code #2 ï Batteries Very Low (Scooter will not operate)
Beep Code #3 ï High Battery Voltage
Beep Code #4 ï Current limit timeout
Beep Code #5 ï Brake Fault
Beep Code #6 ï Paddle Fault (out of neutral)
Beep Code #7 ï Paddle Pot/Speed Pot Fault
Beep Code #8 ï Motor Voltage Fault (Open/Shorted)
Beep Code #9 ï Controller Fault

BEEP CODE #1 – BATTERIES LOW (SCOOTER MAY DRIVE SLOWLY)
This Beep Code occurs when the battery voltage drops below a certain level. Recharge the batteries immediately. If the batteries will not recharge, then load test them or refer to ñScenario 2: Batteries will not Chargeò, on page 12.

BEEP CODE #2 – BATTERIES LOW (SCOOTER WILL NOT OPERATE)
This Beep Code occurs when the battery voltage drops lower than Beep Code #1. Recharge the batteries immediately. If the batteries will not recharge, load test them or refer to ñScenario 2: Batteries will not Chargeò, on page 12.

BEEP CODE #3 - HIGH BATTERY VOLTAGE
This Beep Code occurs when the battery voltage climbs above 26VDC.

1) Insert the key into the key switch and turn it to the on position. Allow the battery level to drop. Do not allow the battery voltage to fall into the red area on the battery meter.
2) Check the battery charger. Make sure it is an approved charger.

BEEP CODE #4 - CURRENT LIMIT TIMEOUT
This Beep Code occurs when the motor has been exceeding its maximum current rating for too long. This may be due to a faulty motor, poor battery condition, excessive uphill driving, or excessive weight. First turn off the scooter and allow it to cool for ten minutes. If this does not work, use the following procedure.

Inspect Motor/Brake and Rear Intermediate Motor Harness Connectors.

1) Remove the seat.
2) Remove the battery pack.
3) Inspect the connection between the motor/brake assembly (10a) and the rear intermediate motor harness (9b). Are either connectors discolored or melted? Refer to figure 11 on page 10.
   - Å Yes? - Replace the drivetrain assembly or rear intermediate motor harness as necessary.
   - Å No? - Go to the next step.

Check Motor Resistance at Motor.

4) Disconnect the motor (10a) from the rear intermediate motor harness (9b).
5) Measure resistance across the two pins on connector 10a that have the thick black wire and the thick red wire (Internal resistance of the motor). **See figure 18.**
   - Å 50 ohms or less but not shorted? (NOTE: Can be as low as 0.2 ohms). ï Go to the next step.
   - Å Out of that range? ï Replace the drivetrain assembly.

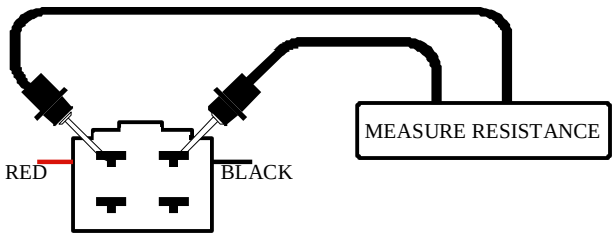


Figure 18. Connector 10a

Check for Continuity between Front and Rear Intermediate Motor Harnesses.

7) Remove the seat.
8) Remove the battery pack.
9) Remove the four screws that fasten the controller cover to the underside of the scooter frame.
10) Disconnect the front intermediate motor harness (8c and 8d) from the controller. Refer to figure 11 on page 10.
11) Make sure that the pins are seated properly on 9b. Check the continuity between 8c/8d and 9b.
    - Å 10 ohms or less? ï Replace the controller.
    - Å Open? ï Go the next step.

12) Separate the drivetrain from the front frame.
13) Inspect the front and rear intermediate motor harness connectors. Are they discolored or corroded?
    - Å Yes? - Replace as necessary.
    - Å No? - Go to the next step.
14) Take a quarter and slide into each contact on the bottom side of the battery pack. **See figure 19.** Does each contact hold the quarter ýrmly in place?
    - Å No? - Replace the battery harness. **See figure 17 on page 12.**
    - Å Yes? - Go to the next step.
15) Check the front intermediate motor harness and the rear intermediate motor harness for continuity.
    - Å 10 ohms or less? ï Replace the controller.
    - Å Open? ï Replace as necessary.

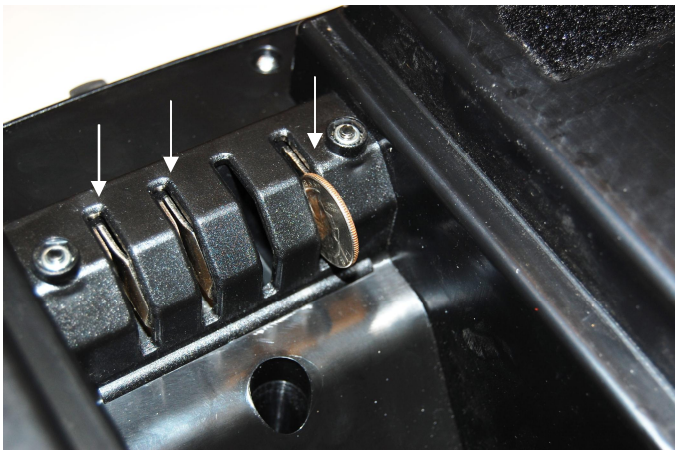


Figure 19. Quarter Test

BEEP CODE #5 - BRAKE FAULT

This Beep Code occurs because the park brake release switch is active or the park brake may be faulty.

Check the Park Brake Position.

1) Turn the key to the off position.
2) Disengage and then re-engage the park brake.
3) Turn the key to the on position. Did the beep code clear?
    - Å Yes? - OK.
    - Å No? - Go to the next step.

Check Park Brake Resistance at the Controller.

4) Remove the seat.
5) Remove the battery pack.
6) Remove the four screws that fasten the controller cover to the underside of the scooter frame.
7) Disconnect the front intermediate motor harness (8b) from the controller. Refer to figure 11 on page 10.
8) Make sure that the pins on 8b are seated properly. Measure resistance across pin 1 and pin 2 on the front intermediate motor harness (8b) **with park brake engaged.** **See figure 20.**
    - Å 80 ohms or less but not shorted? ï Replace the controller.
    - Å Shorted or open? ï Go to the next step.

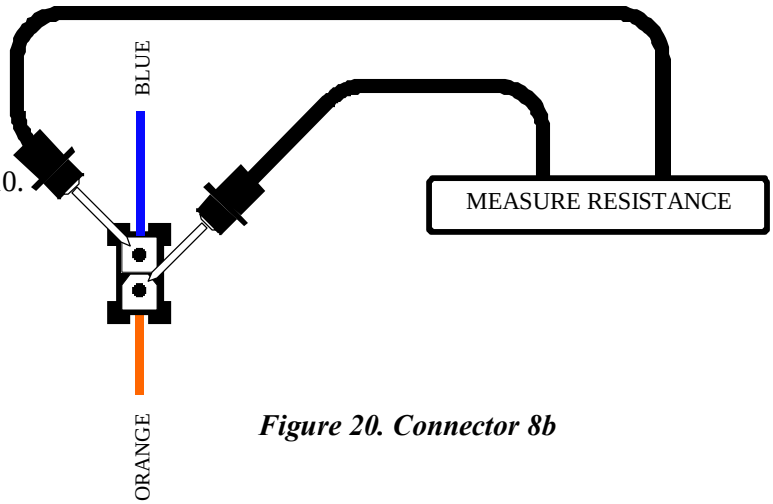


Figure 20. Connector 8b

Check the Continuity Between the Front and Rear Intermediate Motor Harnesses.

10) Unplug the motor harness (10a) from the rear intermediate motor harness (9b). Refer to figure 11 on page 10.
11) Make sure that the pins are seated properly on 10a. Check the continuity between 9b and 8b.
    - Å 10 ohms or less? ï Go to step 15.
    - Å Open? ï Go the next step.

12) Separate the drivetrain from the front frame.
13) Inspect the connection between the front intermediate motor harness (8a) and the rear intermediate motor harness (9a). Refer to figure 11 on page 10. Make sure the contacts are not corroded or damaged.
    - Å Damaged? - Replace harness/es as necessary.
    - Å OK? - Go to the next step.

14) Check the front intermediate motor harness and the rear intermediate motor harness for continuity.
    - Å 10 ohms or less? ï Go to the next step.
    - Å Open? ï Replace as necessary.

Check Resistance at Park Brake.

15) Unplug the park brake (11a) from the motor harness (10b). Refer to figure 11 on page 10. Check the pins on the park brake connector (11a). Make sure they are seated properly.
16) Measure resistance across pin 1 and pin 2 on the park brake (11a) ***with park brake engaged.*** **See figure 21.**
    - Å 80 ohms or less but not shorted? ï Replace the drivetrain assembly.
    - Å Shorted or open? ï Replace the park brake.

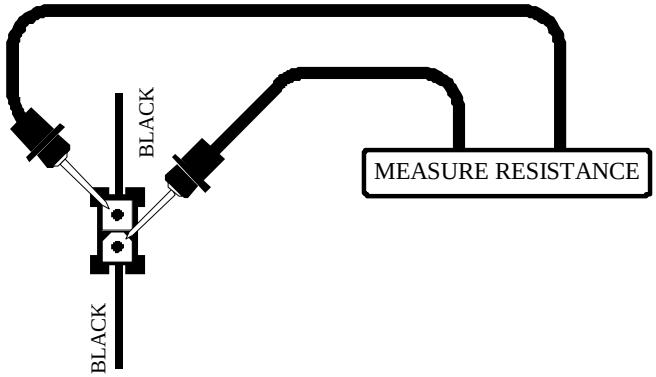


Figure 21. Connector 11a

BEEP CODE #6 - PADDLE FAULT (OUT OF NEUTRAL)

This Beep Code means that the throttle control lever was not in the neutral position when the key is turned to the on position.

1) Turn the key to the off position.
2) Make sure that the paddle pot is not obstructed and it can return to the neutral (center) position.
3) Move the throttle pot forward and then reverse. Make sure that it is not obstructed. Does it spring back to the neutral position?
    - Å Yes? ï Go to the next step.
    - Å No? ï Check for obstructions. Adjust if necessary. Replace if the adjustment does not work or if there are no obstructions.
4) Turn the key to the on position. Does the code return?
    - Å No? ï OK
    - Å Yes? ï Go to Beep CODE #7 to test the paddle pot.

BEEP CODE #7 - PADDLE POT/SPEED CONTROL FAULT

This Beep Code occurs because there is a fault with the throttle pot, speed pot, or the associated wiring.

Check Throttle Pot Resistance at Controller.

1) Remove the seat.
2) Remove the battery pack.
3) Remove the four screws that fasten the controller cover to the underside of the scooter frame.
4) Turn the speed pot to **full rabbit.**
5) Set your multimeter to measure resistance.
6) Disconnect the main harness (7a) from the controller. Refer to figure 11 on page 10.
7) Insert multimeter probes into the main harness connector 7a at pin 8 and pin 2 (blue wire and orange wire). **See figure 22.**
   - Å 2.5k ohm ±10%? - go to the next step.
   - Å Outside that range? - Go to step 9.

8) Insert the multimeter probes into the main harness connector 7a at pin 1 and pin 8 (blue wire and yellow wire). **See figure 23.** Note the resistance reading. Insert the multimeter probe into the main harness connector at pin 1 and pin 2 (yellow wire and orange wire). **See figure 24.** Note the resistance reading.
   - Å Are both readings within 500 ohms of each other? - Replace the controller.
   - Å Are either of the readings outside that range? - Go to the next step.

Check Throttle Pot Resistance at Throttle Pot.

9) Open the control panel.
10) Disconnect the control panel harness (12a) from the throttle pot (13a). Refer to figure 11 on page 10.
11) Insert multimeter probes into the throttle pot connector (13a) at the blue wire and the orange wire (outside two pins). **See figure 25.**
    - Å 2.5k ohm ±10%? - go to the next step.
    - Å Outside that range? - Replace the throttle pot.

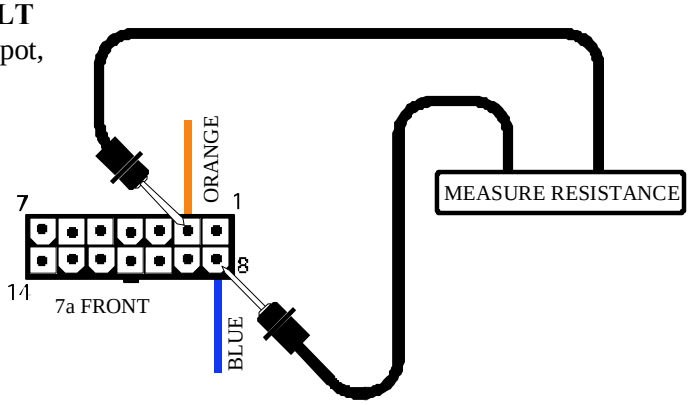


Figure 22. Connector 7a

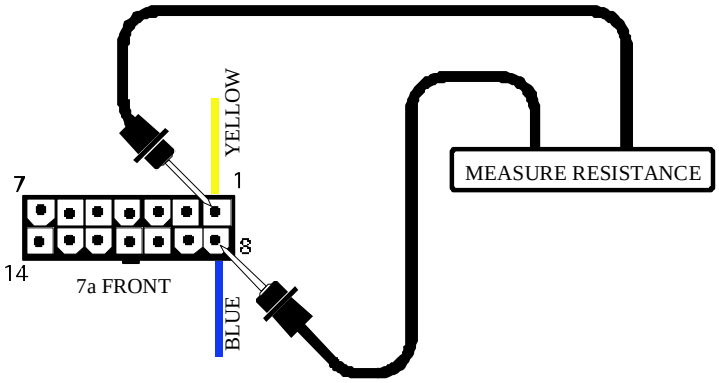


Figure 23. Connector 7a

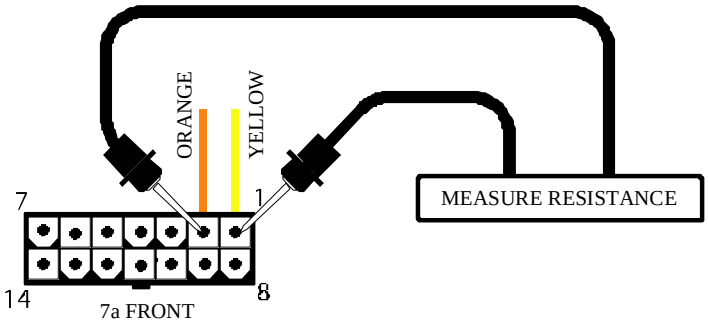


Figure 24. Connector 7a

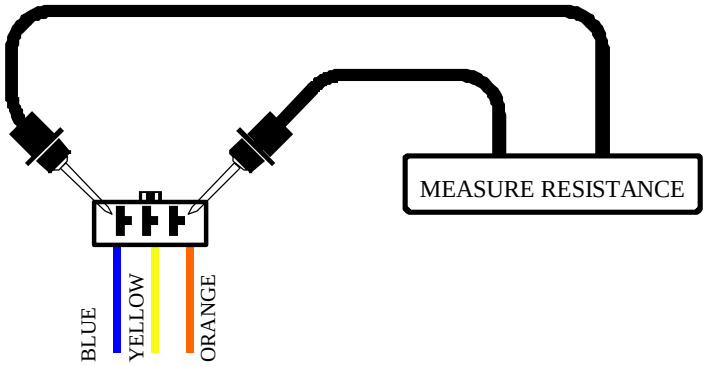


Figure 25. Connector 13a

12) Insert the multimeter probes into the throttle pot connector (13a) at the orange wire and the yellow wire. **See figure 26.** Note the resistance reading. Insert the multimeter probes into the throttle pot connector (13a) at the yellow wire and the blue wire. **See figure 27.** Note the resistance reading.
   - Are both readings within 500 ohms of each other? - Go to the next step.
   - Are either of the readings outside that range? ï Replace the throttle pot.

13) Check the orange, blue, and yellow wires on the main harness for continuity.
   - 10 ohms or less on each one? - Replace the control panel.
   - Open on any wire? - Replace the main harness.

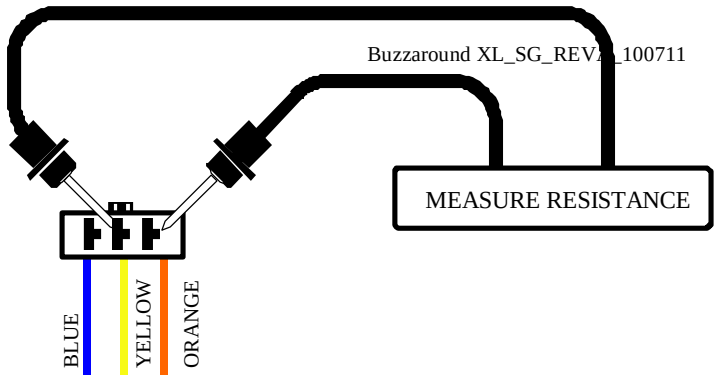


Figure 26. Connector 13a

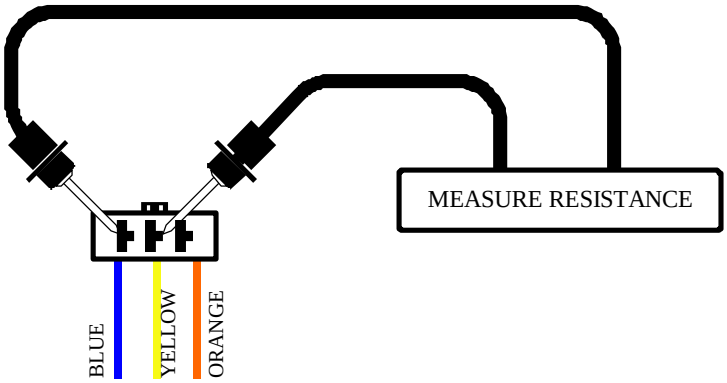


Figure 27. Connector 13a

BEEP CODE #8 - MOTOR VOLTAGE FAULT (OPEN)
This Beep Code occurs when there is an internal problem with the motor or its wiring.

Check Motor Resistance at Controller.

1) Remove the seat.
2) Remove the battery pack.
3) Remove the four screws that fasten the controller cover to the underside of the scooter frame.
4) Disconnect the front intermediate motor harnesses (8c and 8d) from the controller. Refer to figure 11 on page 10.
5) Measure resistance across the front intermediate motor harness 8c and 8d. **See figure 28.**
   - 50 ohms but not shorted? (NOTE: Can be as low as 0.2 ohms). ï replace the controller.
   - Out of that range? ï Go to the next step.

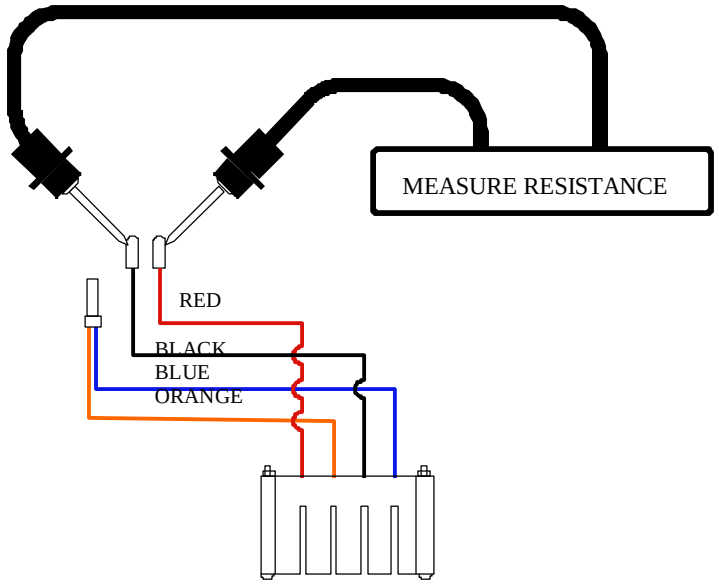


Figure 28. Connectors 8c and 8d

Check Continuity between Front and Rear Intermediate Motor Harnesses.

6) Unplug the motor/brake assembly (10a) from the rear intermediate motor harness (9b). Refer to figure 11 on page 10.
7) Make sure that the pins are seated properly on 9b. Check the continuity between 8c/8d and 9b.
   - 10 ohms or less? ï Go to step 13.
   - Open? ï Go the next step.
8) Remove the battery pack.
9) Separate the drivetrain from the front frame.
10) Inspect the front and rear intermediate motor harness connectors. Are they discolored, corroded, or damaged?
   - Yes? - Replace as necessary.
   - No? - Go to the next step.

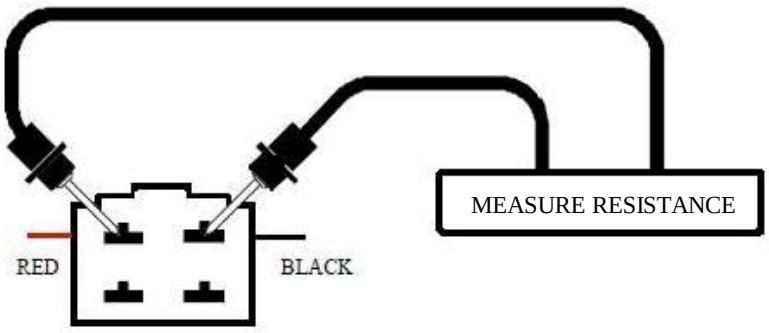


Figure 29. Connector 10a

11) Check the front intermediate motor harness
and the rear intermediate motor harness for continuity.
- Å 10 ohms or less? ï Go to the next step.
- Å Open? ï Replace as necessary.

Check Motor Resistance at Motor.

12) Make sure that the pins are seated properly on 10a. ***Disconnect 10a from 9b if necessary.***
Refer to figure 11 on page 10.

13) Measure resistance across pin 1 (thick red wire) and pin 2 (thick black wire) on 10a. **See figure 29.**
- Å 50 ohms or less but not shorted?
(NOTE: Can be as low as 0.2 ohms). ï Replace the controller.
- Å Out of that range? ï Replace the drivetrain assembly.

BEEP CODE #9 - CONTROLLER FAULT

This Beep Code means that the controller has an internal fault.

1) Remove the key from the key switch and allow the controller to cool down. If the code continues, then replace the controller.

BUZZAROUND XL REPLACEMENT INSTRUCTIONS

DRIVEWHEEL REPLACEMENT

Tools needed: 19mm socket, frame blocks.

1. Place the freewheel lever into the engaged position.
2. Remove the key from the key switch.
3. Place the rear of the scooter onto blocks.
4. Remove the hubcap.
5. Remove the nut and washer that fastens the wheel to the axle. *Make sure you retain the axle key.* **See #1 on figure 30.**
6. Place a new wheel onto the axle. ***Make sure that the axle key is reinstalled in its original position.***
7. Reinstall the wheel cover and wheel hardware.
8. Tighten securely.
9. Reinstall the hubcap.

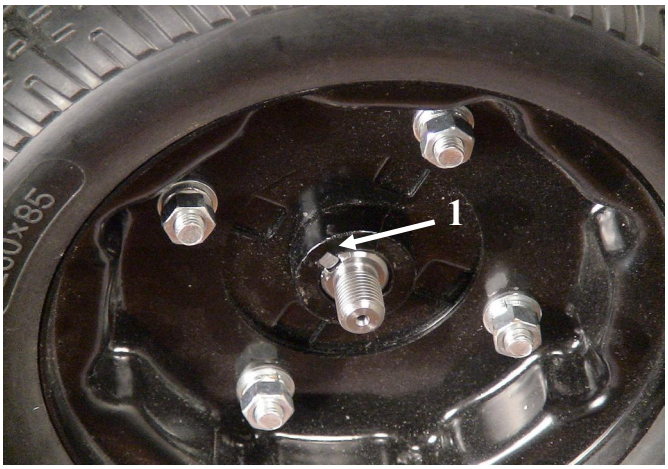


Figure 30. Drive Wheel Axle Key

DRIVETRAIN REPLACEMENT

Tools needed: 19mm Socket

1. Place the freewheel lever in the engaged position.
2. Remove the key from the key switch.
3. Remove the seat.
4. Remove the battery pack.
5. Loosen the drive wheel nuts on both the left and right sides, which fasten the wheels to the axle.
6. Separate the front and rear frames.
7. Remove the drive wheels. ***Make sure you retain the axle keys.***
8. Remove the drive train from the rear frame.
9. Install the drive wheels onto the new drive train.
10. Install the new drive train onto the rear frame.
11. Connect the rear and front frames.
12. Reinstall the battery pack.
13. Reinstall the seat.

THROTTLE POT REPLACEMENT

Tools needed: Slotted and Phillips screwdrivers

1. Place the freewheel lever in the engaged position.
2. Remove the key from the key switch.
3. Use a slotted screwdriver to remove the control panel cover.
4. Remove the control panel from the tiller.
5. Disconnect the throttle pot from the control panel harness.
6. Remove the two screws that fasten the throttle pot to the tiller. **See #1 on figure 31.**
7. Remove the two screws that fasten the throttle lever to the throttle control lever bracket and lift off the throttle lever. **See #2 on figure 31.**

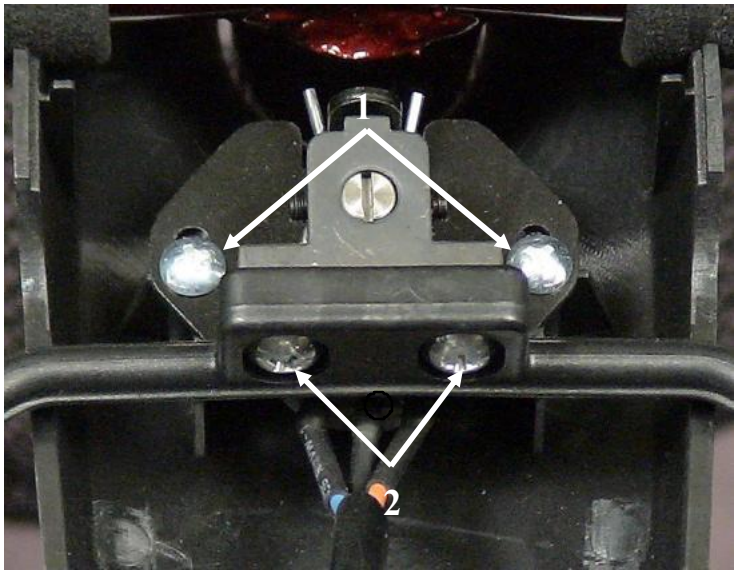


Figure 31. Throttle Pot

8. Install the throttle lever onto the new throttle pot.
9. Install the new throttle pot onto the tiller shroud.
10. Connect the new throttle pot to the control panel harness.
11. Reinstall the back tiller shroud onto the tiller.
12. Reinstall the control panel onto the tiller.
13. Reinstall the control panel cover.

BATTERY REPLACEMENT

Tools needed: Phillips screwdriver and adjustable wrench

1. Place the freewheel lever in the engaged position.
2. Remove the key from the key switch.
3. Rotate the seat so that it is facing the side.
4. Remove the battery pack.
5. Position the battery pack so that the screw heads are facing up. **See figure 32.**
6. Use an adjustable wrench to loosen the circuit breaker button cover. **See figure 32.**
7. Remove the eleven (11) screws that fasten the battery pack together. **See figure 32.**
8. Turn the battery pack over so that the screw holes are facing down. **See figure 33.**
9. Remove the top of the of the battery pack.

Note the position of the battery harness. Make sure that you position it in the exact same place during assembly.

10. Disconnect one of the batteries from the battery harness and the circuit breaker and remove it.
11. Disconnect the other battery from the battery harness and the circuit breaker and remove it.
12. Place a new battery into the bottom half of the battery pack. Make sure that the terminals are facing as shown**. See figure 33.**
13. Connect the battery harness and the circuit breaker to that battery.
14. Place the second new battery into the bottom half of the battery pack with the terminals facing as shown. **See figure 33.**

WARNING **Prevent electrical shock! Make sure that you connect the batteries according to the battery diagram. See figure 34.**

15. Connect the battery harness and circuit breaker to that battery.
16. Place the top half of the battery pack onto the bottom.
17. Turn the battery pack over.
18. Reinstall the eight (8) screws that fasten the top and bottom halves of the battery pack together.
19. Tighten the circuit breaker button cover.
20. Reinstall the battery pack.

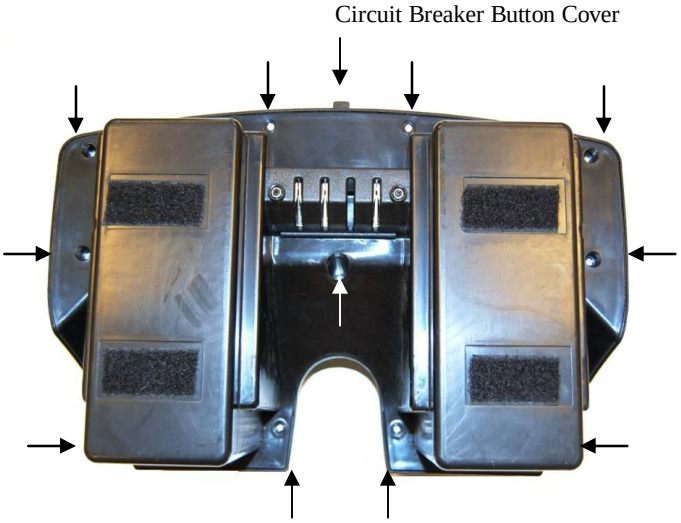


Figure 32. Battery Pack (bottom side)

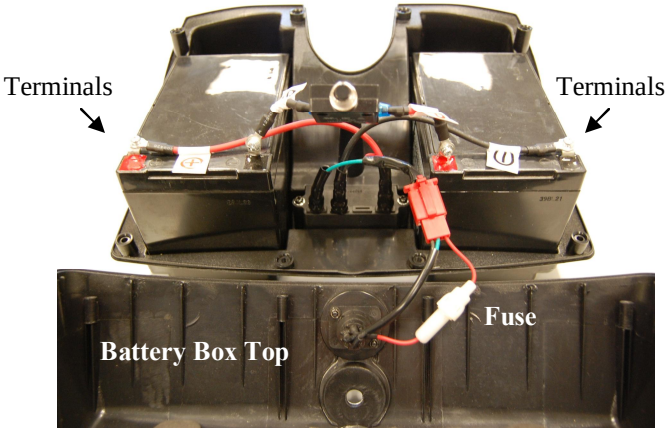


Figure 33. Inside Battery Pack

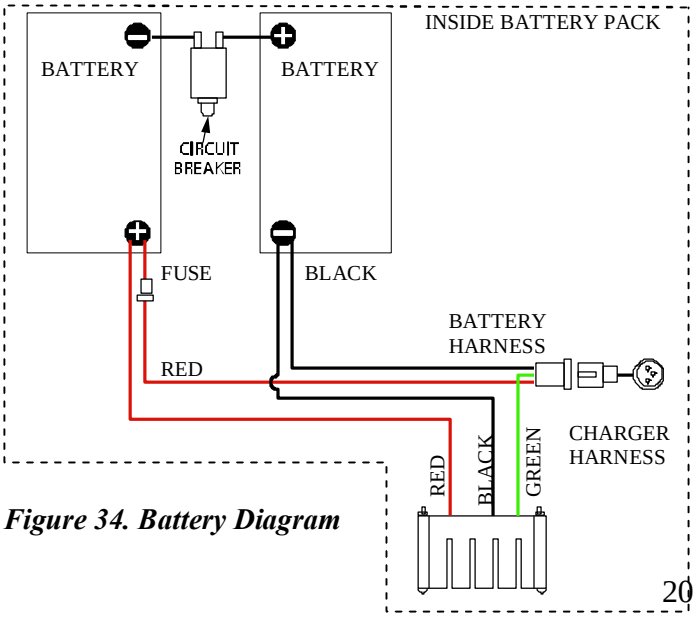


Figure 34. Battery Diagram

CIRCUIT BREAKER REPLACEMENT

Tools needed: Slotted screwdriver, Phillips screwdriver, and adjustable wrench

1. Place the freewheel lever in the engaged position.
2. Remove the key from the key switch.
3. Remove battery pack.
4. Use an adjustable wrench to loosen the circuit breaker button cover.
5. Remove the eleven (11) screws that fasten the battery pack together.
6. Disconnect one battery from the battery harness and circuit breaker.
7. Disconnect the opposite battery from the circuit breaker.
8. Install the new circuit breaker onto the battery harness.
9. Reinstall the battery harness onto the battery.
10. Connect the opposite battery harness to the other battery.
11. Reinstall the battery pack halves together.
12. Tighten the circuit breaker button cover.

BATTERY HARNESS FUSE REPLACEMENT

Tools needed: Phillips screwdriver and adjustable wrench

1. Place the freewheel lever in the engaged position.
2. Remove the key from the key switch.
3. Remove the battery pack.
4. Use an adjustable wrench to loosen the circuit breaker button cover.
5. Remove the eight (11) screws that fasten the battery pack together.
6. Open the battery harness fuse holder.
7. Remove the old fuse from the fuse holder.
8. Install a new fuse into the fuse holder. **Note:** ***Fuse must be replaced with exact type and rating.***
9. Reinstall the bottom half of the battery pack onto the top half.
10. Tighten the circuit breaker button cover.
11. Reinstall the battery pack.

CONTROLLER REPLACEMENT

Tools needed: Phillips screwdriver and 3mm Allen wrench

1. Place the freewheel lever in the engaged position
2. Remove the key from the key switch.
3. Remove the seat.
4. Remove the battery pack.
5. Remove the four screws that fasten the controller cover to the underside of the scooter frame.
6. Unplug the main harness, the front intermediate motor harness, and the power harness from the controller. **See #1, #2, and #3 on figure 35.**

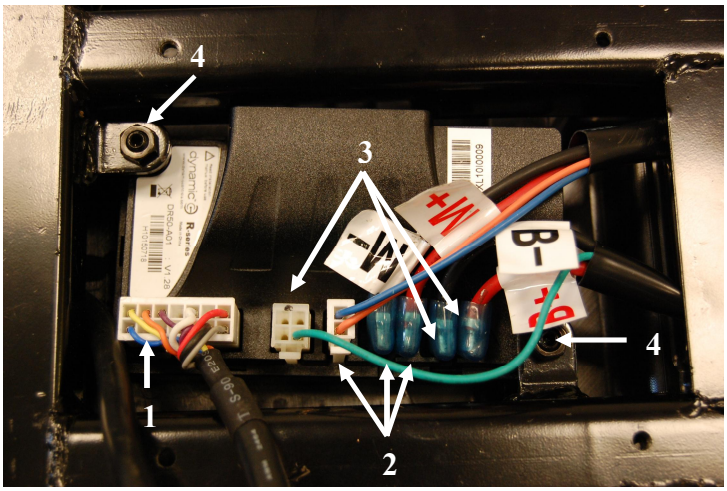


Figure 35. Controller

NOTE: Make sure not to mix up the red/black front intermediate motor harness wires with the red/black power harness wires.

7. Remove the two (2) screws that attach the controller to the frame. **See #4 on figure 35.**
8. Install the new controller onto the frame.
9. Plug in the main harness, the front intermediate motor harness, and the power harness into the new controller.
10. Reinstall the controller cover onto the underside of the scooter frame.
11. Reinstall the battery pack.
12. Reinstall the seat.

MAIN HARNESS REPLACEMENT

Tools needed: Phillips screwdriver and slotted screwdriver

1. Engage the park brake.
2. Remove the key from the key switch.
3. Remove the seat.
4. Remove the battery pack.
5. Lock the tiller.
6. Remove the control panel shroud. **See #1 on figure 36.**
7. Remove the four screws that fasten the control panel to the tiller. **See figure 37.**
8. Disconnect the main harness (7b) from the control panel. **See #1 on figure 38.**
9. Turn the front frame over onto it side.
10. Remove the four screws that fasten the controller cover to the underside of the scooter frame.
11. Disconnect the main harness (7a) from the controller. **See #1 on figure 35 on page 21.**
13. Remove the main harness.
14. Thread the 8-pin connector on the new main harness through the rubber grommet. **See #1 on figure 39.**
15. Thread the 8-pin connector on the new main harness through the tiller.
16. Connect the control panel to the new main harness.
17. Reinstall the control panel onto the tiller.
18. Reinstall the control panel shroud.
19. Connect the 14-pin connector on the new main harness to the controller.
20. Reinstall the controller cover onto the underside of the scooter frame.
21. Reinstall the battery pack.
22. Reinstall the seat.

Figure 36. Control Panel Shroud

Figure 37. Control Panel Removal

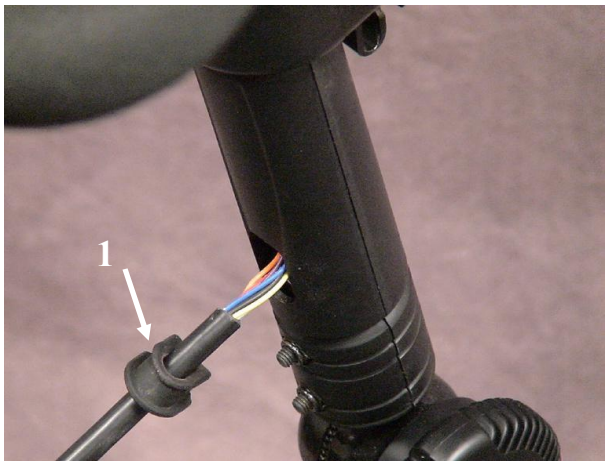


Figure 39. Tiller Cover Grommet

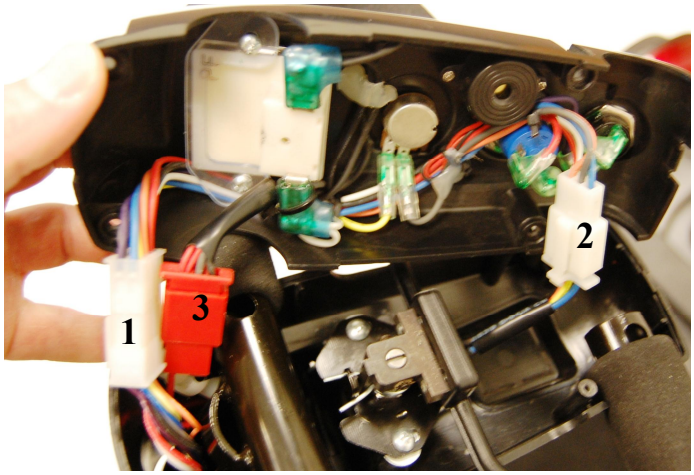


Figure 38. Control Panel Connectors

CONTROL PANEL REPLACEMENT

Tools needed: Phillips screwdriver and slotted screwdriver

1. Engage the park brake.
2. Remove the key from the key switch.
3. Remove the control panel shroud. **See #1 on figure 36 on page 22.**
4. Remove the four (4) screws that fastens the control panel to the tiller. **See figure 37 on page 22.**
5. Disconnect the control panel from the main harness, throttle pot, and charger port. **See #1, #2, and #3 on figure 38 on page 22.**
6. Connect the new control panel to the main harness, throttle pot., and charger port.
7. Reinstall the new control panel onto the tiller.
8. Reinstall the control panel shroud.

BRAKE REPLACEMENT

Tools needed: 19mm Socket and Phillips screwdriver

1. Place the freewheel lever in the engaged position.
2. Remove the key from the key switch.
3. Remove the seat.
4. Remove the battery pack.
5. Loosen the right side drive wheel nut.
6. Separate the front and rear frames.
7. Remove the right drive wheel.
   Make sure you retain the axle key.
8. Disconnect the brake from the motor harness.
9. Remove the four (4) screws that fasten the brake to the motor. **See figure 40.**
10. Remove the brake.
11. Make sure that the new brake is in the disengaged position.
12. Fasten the new brake onto the motor with the four screws removed in step 9.
13. Reinstall the right drive wheel.
14. Install the drivetrain onto the front frame.
15. Reinstall the battery pack.

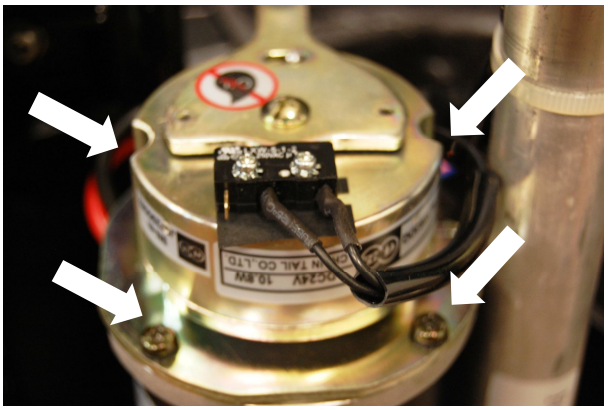


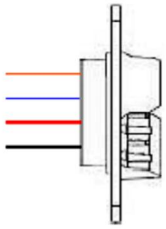
Figure 40. Brake Removal

FRONT INTERMEDIATE HARNESS REPLACEMENT

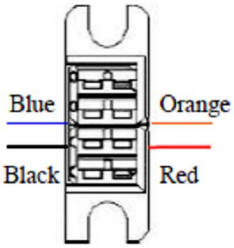
Tools needed: Phillips screwdriver, 7mm socket, 8mm socket or 8mm open end wrench

Front APP connector

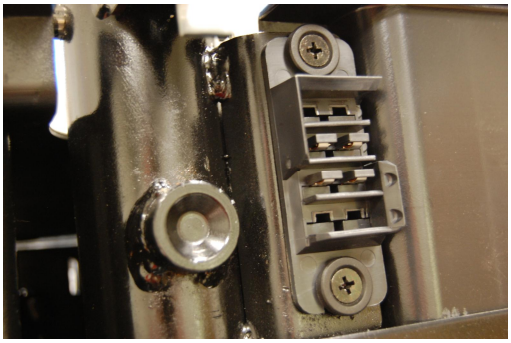
Orange/Blue and Red/Black wires go to the Controller



SIDE VIEW



FRONT VIEW



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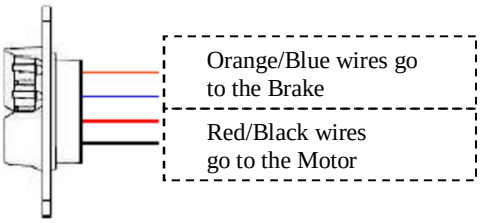
1. Place the freewheel lever in the engaged position.
2. Remove the key from the key switch.
3. Remove the seat.
4. Remove the battery pack.
5. Separate the front and rear frames.
6. Remove the four screws that fasten the controller cover to the underside of the scooter frame.
7. Unplug the M+ (red) M- (black) and the brake (orange/blue) wires from the controller.
8. Unplug the B+ (red) B- (black) and the (green) wires from the controller.
9. Remove the carpet.
10. Remove the four rearward screws from the floor shroud under the carpet.
11. Remove the two side color panels.
12. Lift the floor shroud off the frame.
13. Remove the two screws from the APP connector and remove the harness.
14. Thread the new harness through the frame and reinstall the two screws to secure the APP connector to the frame. Tighten the screws until the connector is flush with the frame. **Do not over tighten the screws**.
15. Connect the M+ (red) M- (black) and the brake (orange/blue) wires to the controller.
16. Place the floor shroud onto the frame, thread the B+ (red) B- (black) and the (green) wires through the frame and connect them to the controller**.**
    Caution: Make sure not to mix up the red/black motor and the red/black battery wires on the controller.
17. Reinstall the four floor shroud screws.
18. Reinstall the two side color panels.
19. Reinstall the carpet.
20. Reinstall the four screws that fasten the controller cover to the underside of the scooter frame.
21. Reconnect the front and rear frames.
22. Reinstall the battery pack.
23. Reinstall the seat.

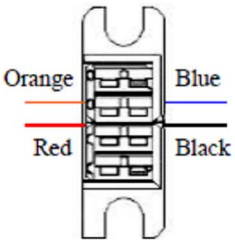
REAR INTERMEDIATE HARNESS REPLACEMENT

Tools needed: Phillips screwdriver, 10mm socket, and 10mm open end wrench

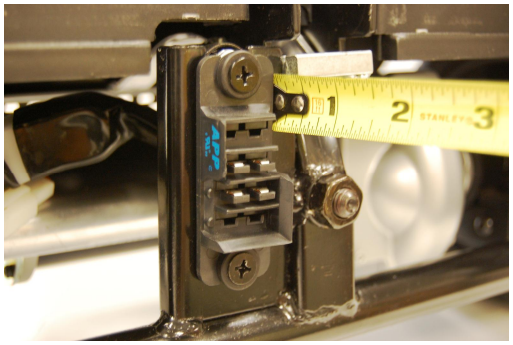
Rear APP connector



SIDE VIEW



FRONT VIEW



1. Place the freewheel lever in the engaged position.
2. Remove the key from the key switch.
3. Remove the seat.
4. Remove the battery pack.
5. Separate the front and rear frames.
6. Unplug the motor and brake connections on the rear intermediate harness.
7. Remove the two screws from the APP connector and remove the harness.
8. Thread the new harness through the frame and reinstall the bottom screw into the APP connector and tighten the screw until the APP connector is flush with the frame. **Do not over tighten.**
9. Insert the top screw into the APP connector and tighten until the connector is flush with the frame. Now back the screw out one and one half turns. This will leave the connector float free from the frame by approximately one eight on an inch.
10. Reconnect the rear intermediate motor and brake connections.
11. Reconnect the front and rear frames.
12. Reinstall the battery pack.
13. Reinstall the seat.

APPENDIX A - HOW TO USE A VOLTMETER

Step 1
Plug the probes into the meter. Red goes to the positive (+) and black to the negative (-).

Step 2
Turn the selector dial or switch to the type of measurement you want. To measure direct current - a battery, for example - use DCV. To measure alternating current, such as a wall outlet, use ACV.

Step 3
Choose the range setting. The dial may have options from 5 to 1000 on the DCV side and 10 to 1000 on the ACV side. The setting should be the top end of the voltage you are reading. Not all voltmeters have this setting.

Step 4
Turn the meter on.

Step 5
Hold the probes by the insulated handles and touch the red probe to the positive side of a DC circuit or either side of an AC circuit. Touch the other side with the black probe.

Step 6
Read the digital display or analog dial.

Figure 38. Multimeter (Set to DC Volts)

APPENDIX B - HOW TO USE AN OHM METER

Ohmôs law breaks down into the basic equation: Voltage = Current x Resistance. Current is generally measured in amps, and resistance in ohms. Testing the resistance on an electrical circuit in your home or car can help you diagnose problems with that circuit. You can use a simple ohmmeter for this task, but most professionals now use the ohmmeter function of a multimeter (also called multitester or VOM, for volt/ohmmeter). Read on for instructions on how to use an ohmmeter and test for resistance.

- Ohmmeter or Multimeter (Volt/ohmmeter)
- Circuit to test (with all power OFF)
- Service manual

Step 1
Disconnect completely and/or turn OFF all power to the circuit you are testing. You must have a completely dead wire or circuit in order to ensure accuracy in measurement, as well as your own safety. Your ohmmeter will supply the voltage and current for your circuit so NO other power is necessary. Testing a powered circuit can ñcause damage to the meter, circuit, and *you*.ò

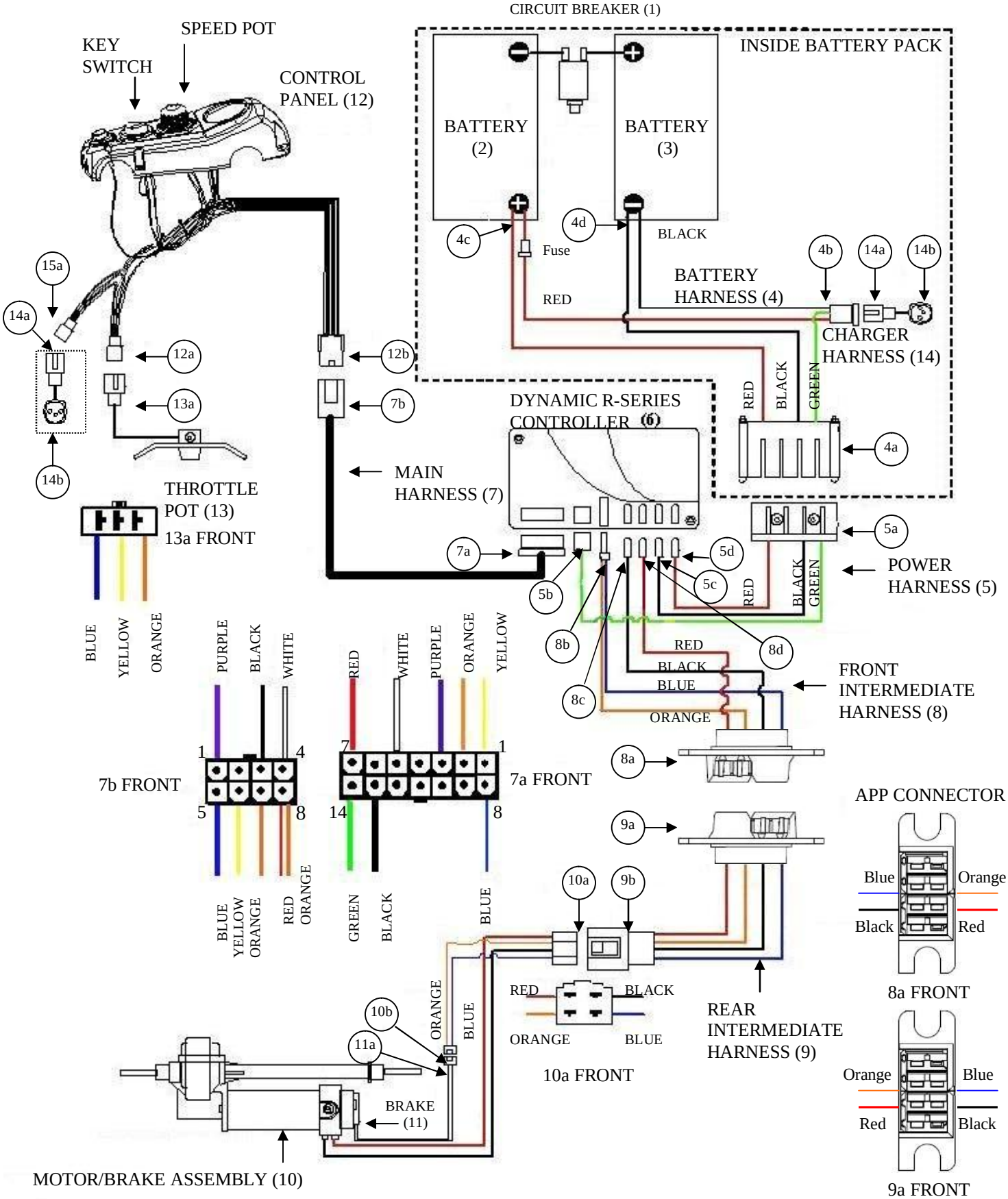
Step 2
Connect testing wires to the ohmmeter. The black wire goes to the ground (common) outlet, the red wire to the volt/ohms outlet.

Step 3
Consult a service manual for the normal range of resistance for the circuit you are testing.

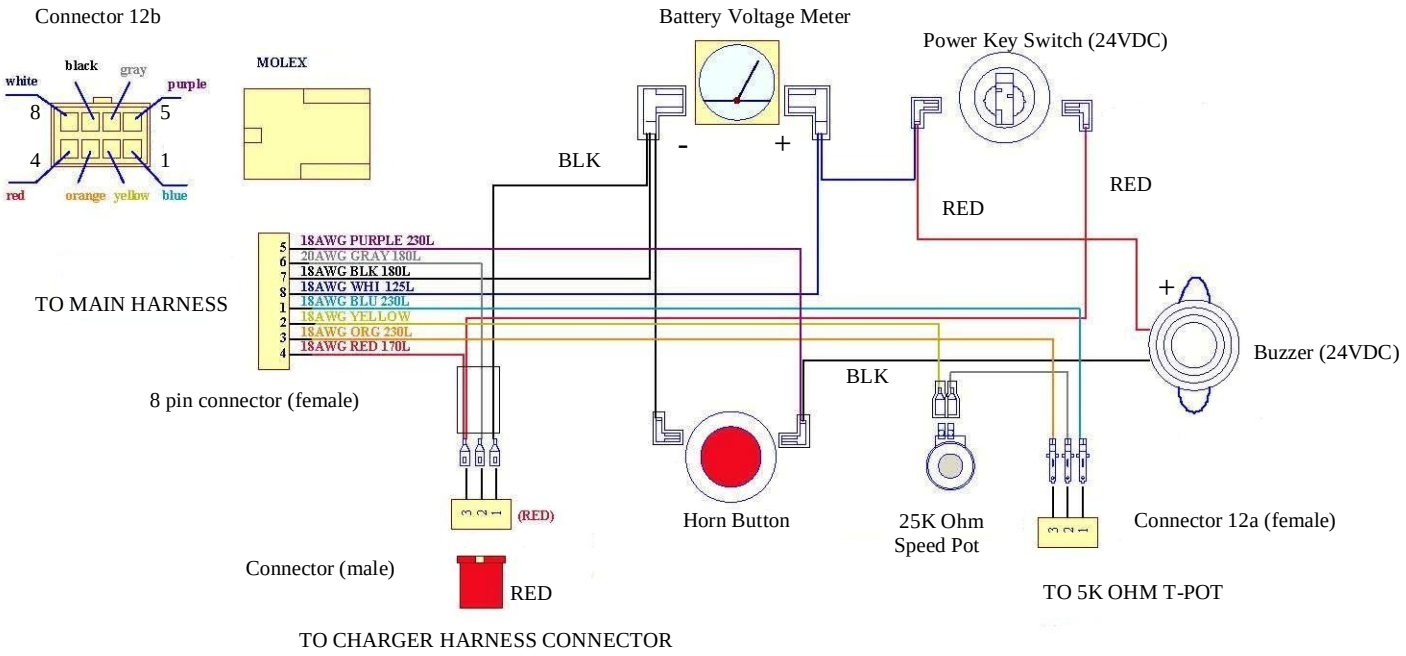
Step 4
Set the dial to the ñohmsò setting with a multimeter. On an individual ohmmeter, you may have to set a range for the readings, in ohms, kilohms or megohms. Use the range you located in your service manual to set the dial.

Figure 39. Multimeter (Set to Ohms)

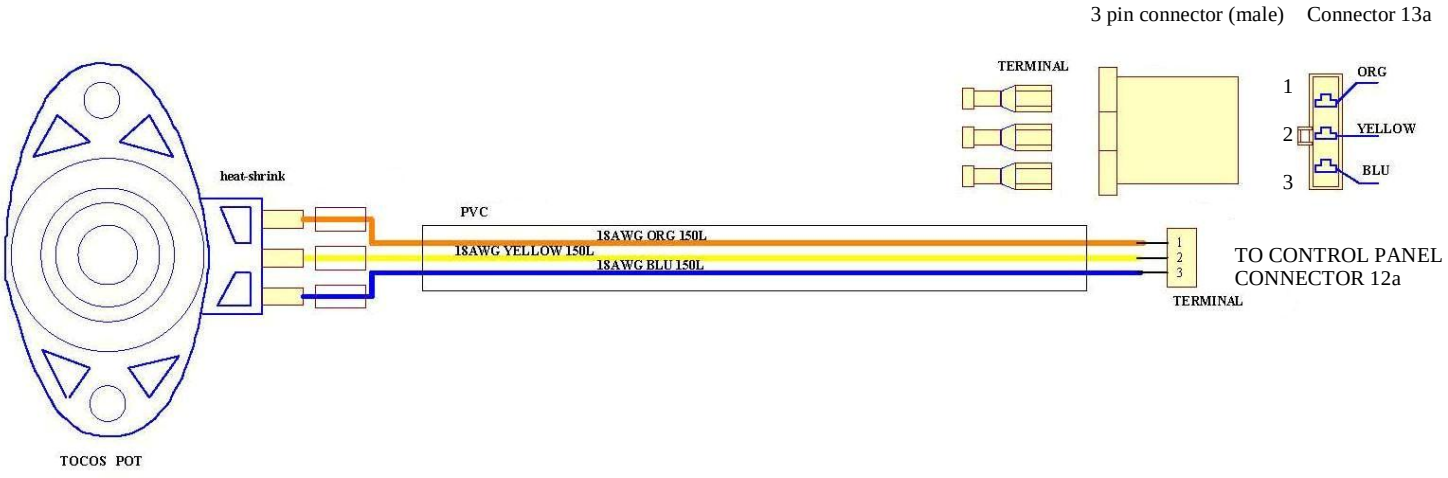
APPENDIX C – WIRING DIAGRAMS



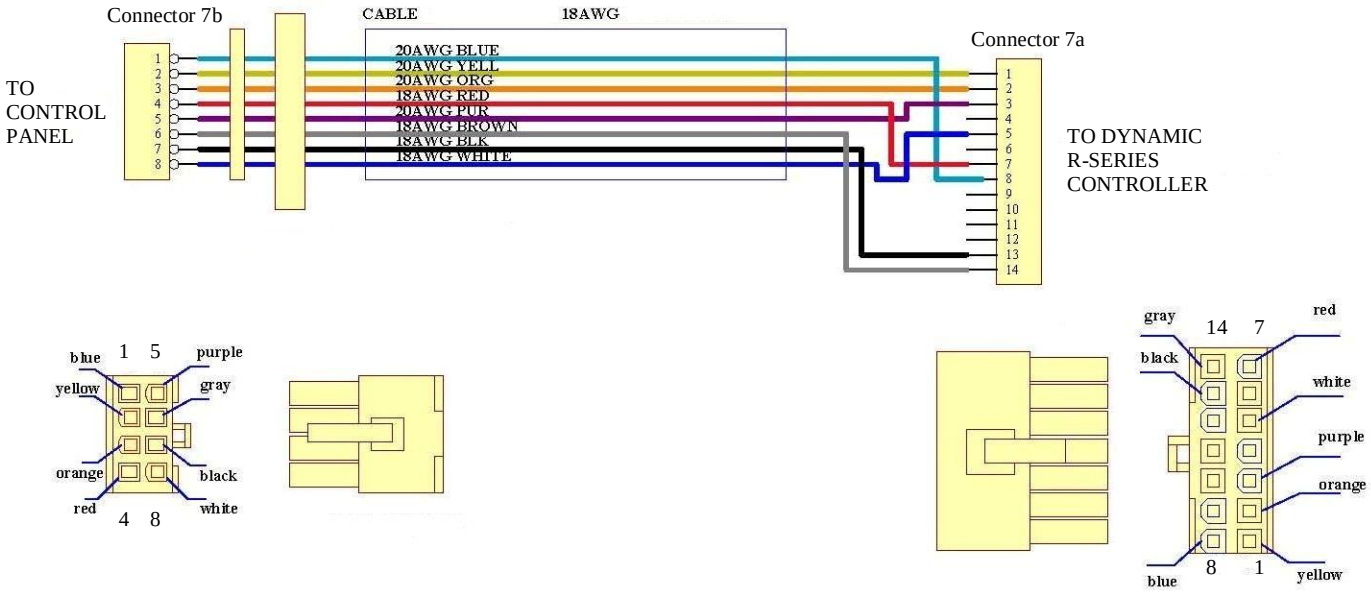
Buzzaround XL Wiring Diagram



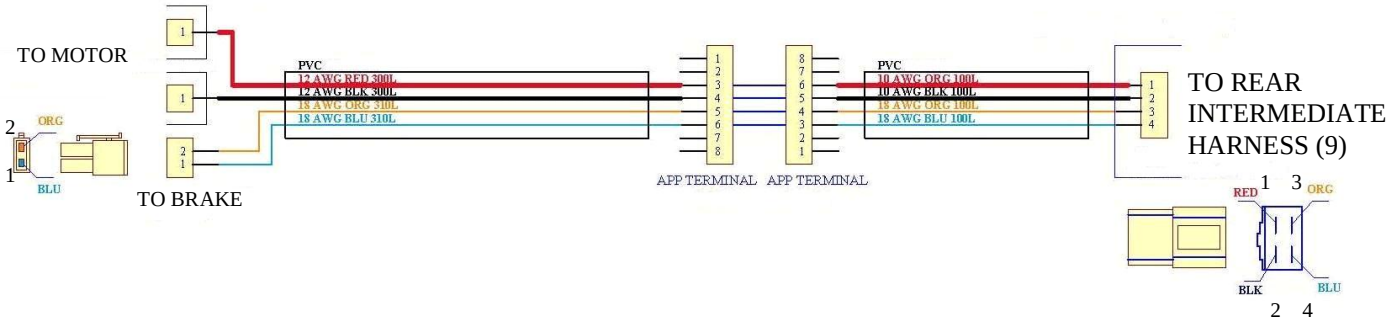
CONTROL PANEL (12)



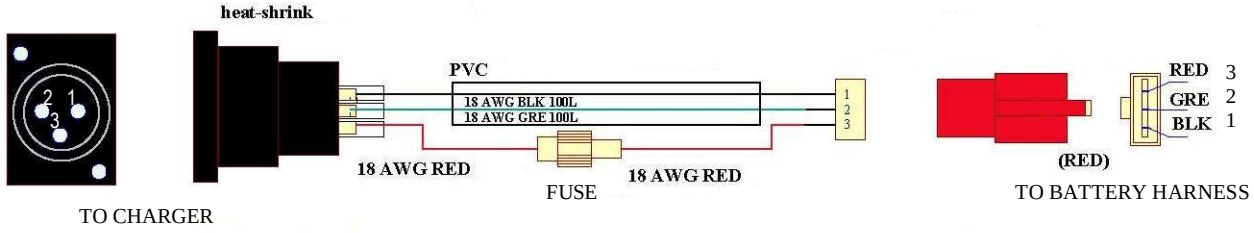
THROTTLE POT (13)



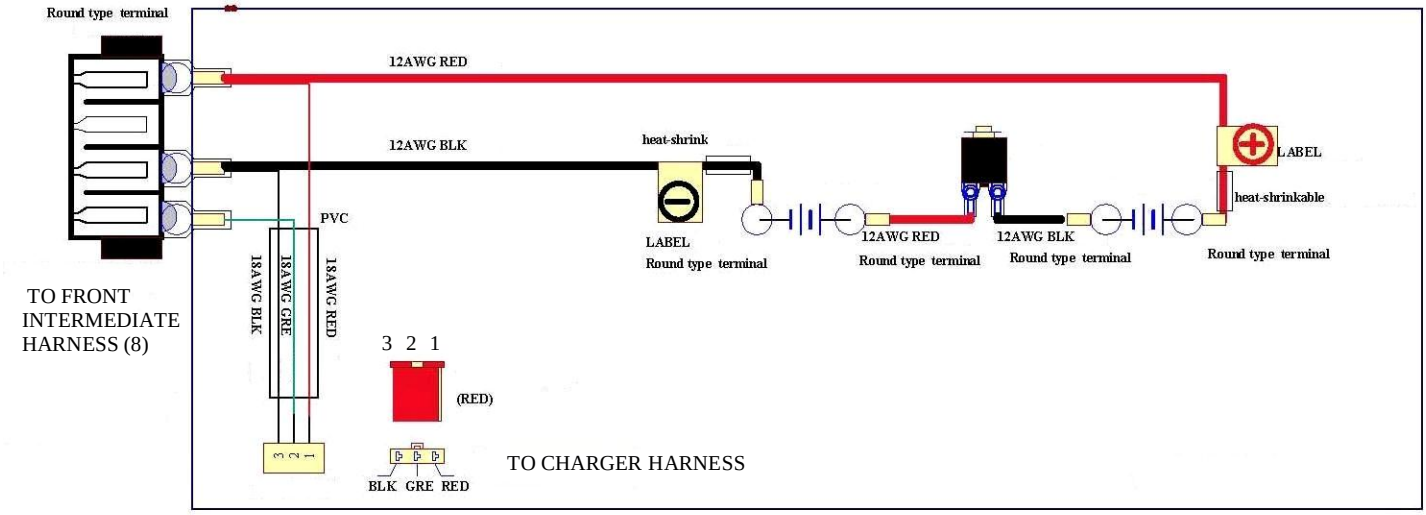
MAIN HARNESS (7)



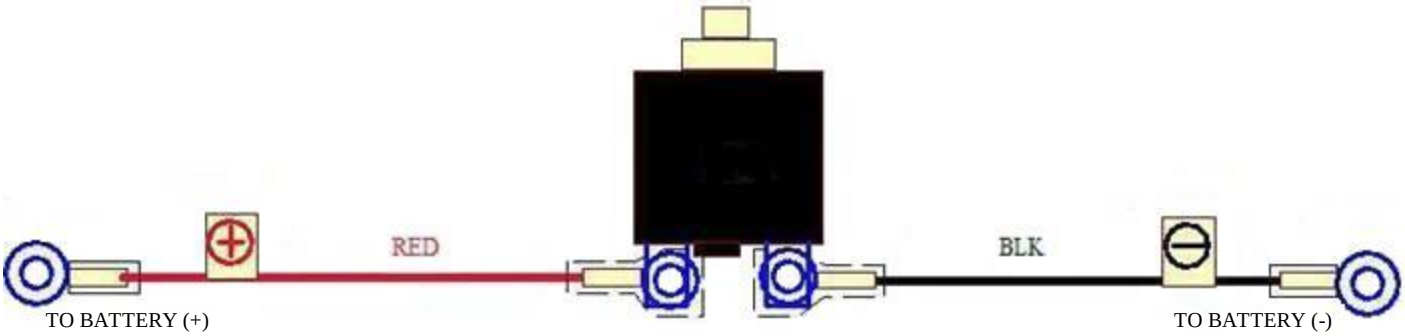
MOTOR/BRAKE HARNESS



CHARGER HARNESS (14)



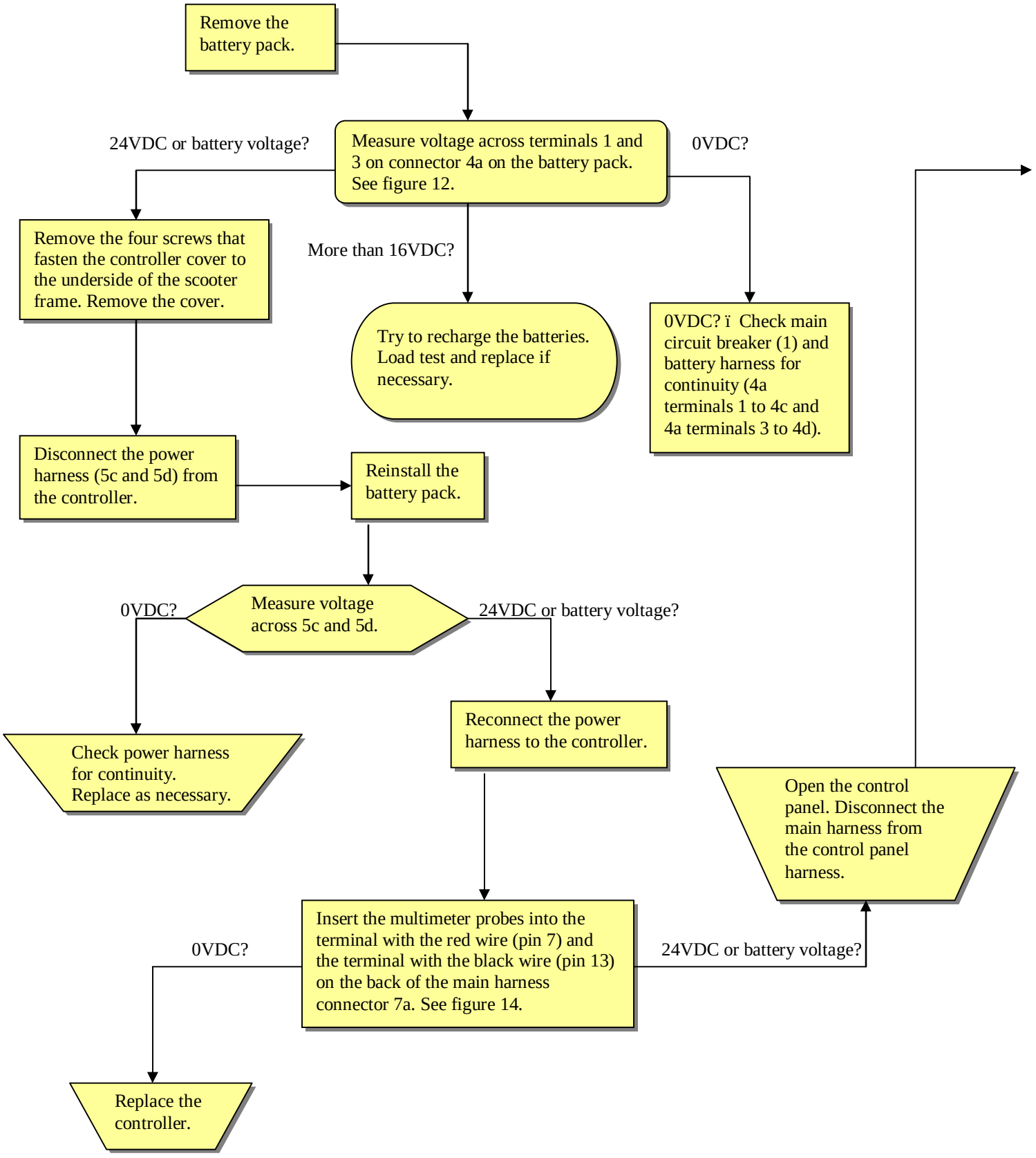
BATTERY BOX

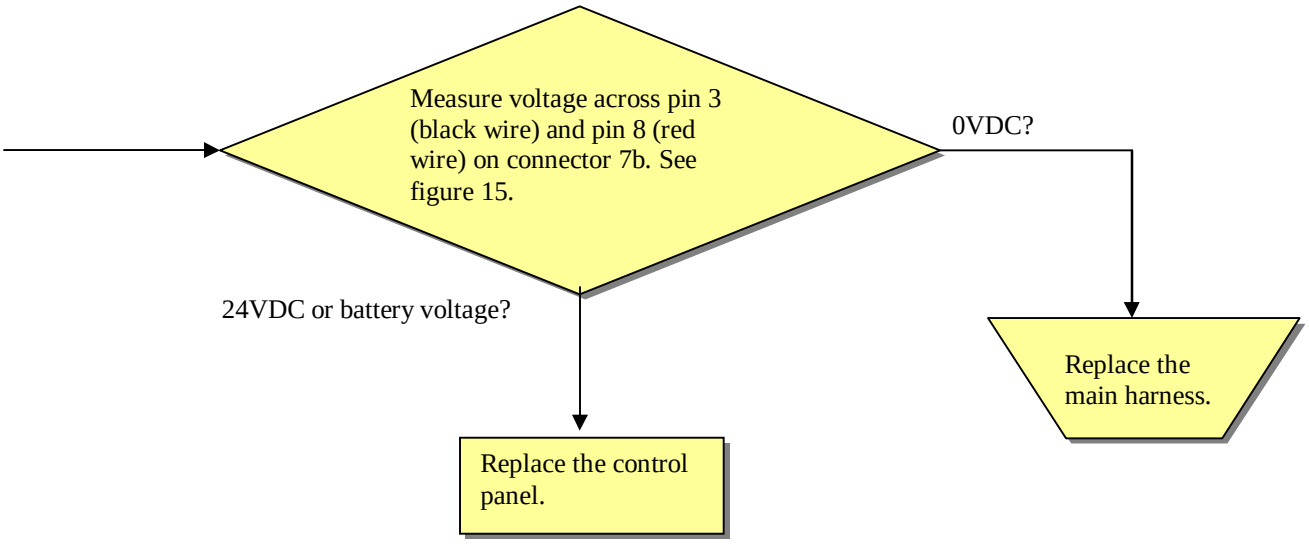


CIRCUIT BREAKER (1)

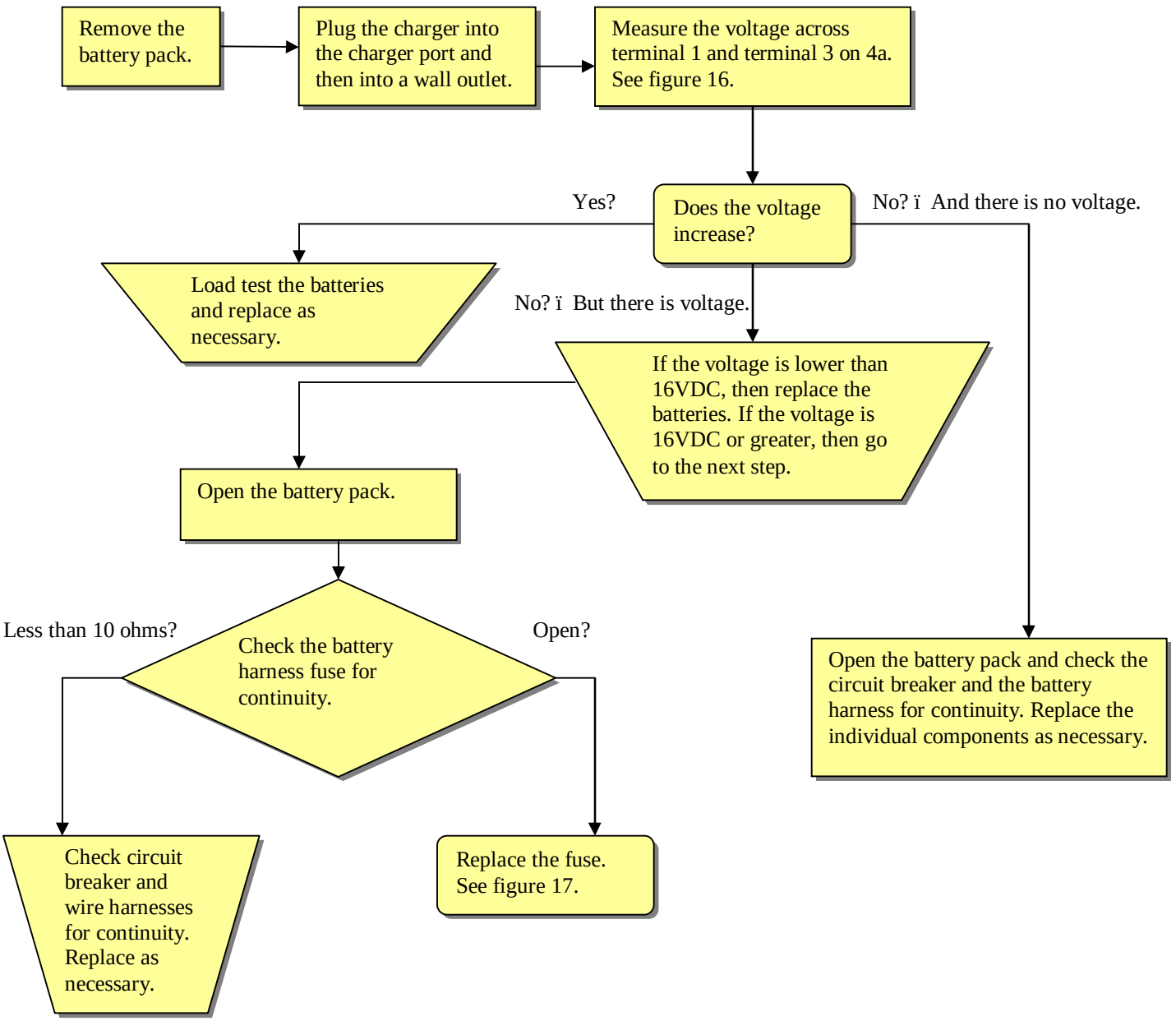
APPENDIX D - TROUBLESHOOTING FLOW CHARTS

SCENARIO 1: TURN THE KEY TO THE ON POSITION AND NO POWER

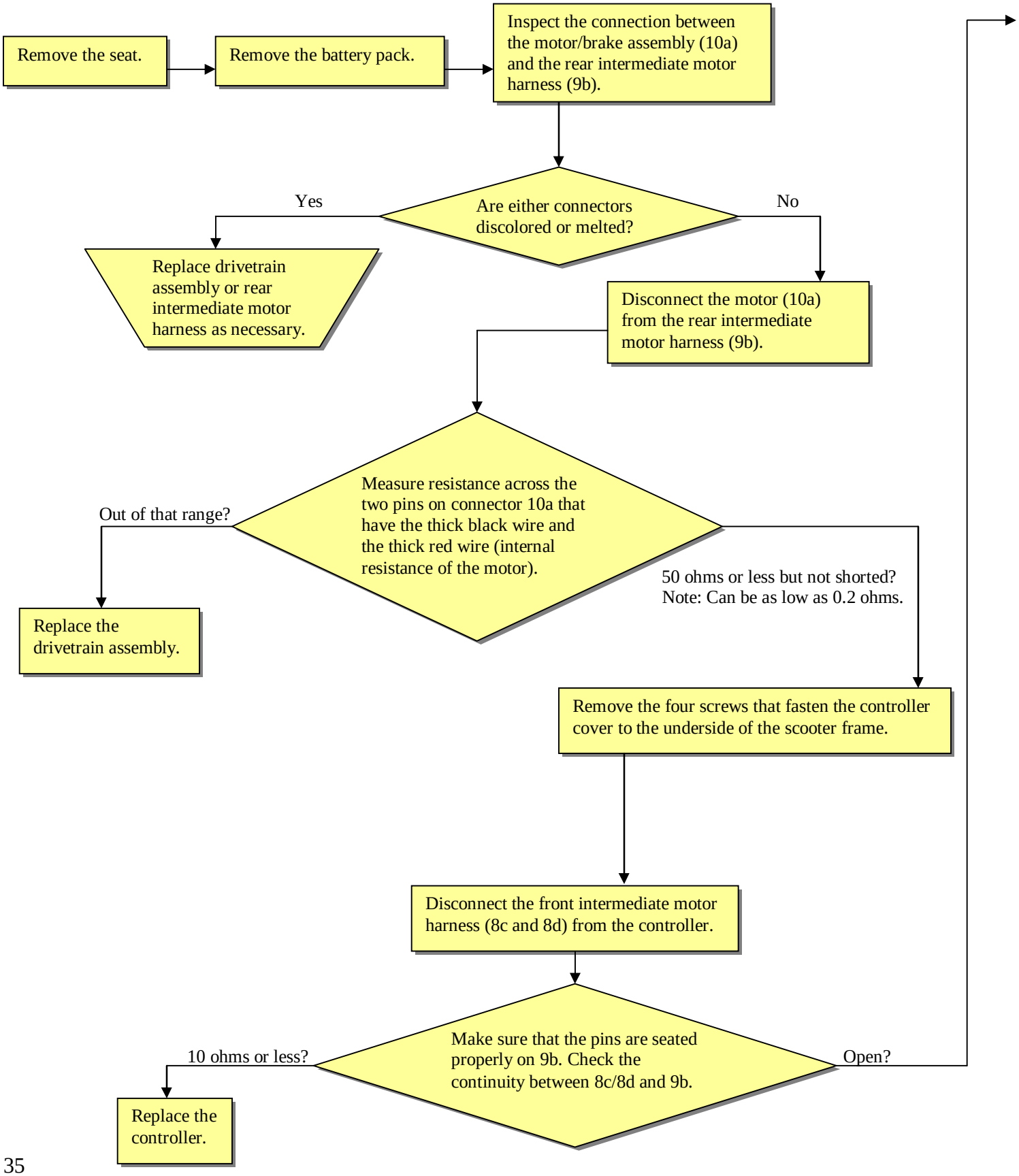

Remove the battery pack.
Measure voltage across terminals 1 and 3 on connector 4a on the battery pack. See figure 12.
24VDC or battery voltage?
0VDC?
More than 16VDC?
Remove the four screws that fasten the controller cover to the underside of the scooter frame. Remove the cover.
Try to recharge the batteries. Load test and replace if necessary.
0VDC? ï Check main circuit breaker (1) and battery harness for continuity (4a terminals 1 to 4c and 4a terminals 3 to 4d).
Disconnect the power harness (5c and 5d) from the controller.
Reinstall the battery pack.
0VDC?
Measure voltage across 5c and 5d.
24VDC or battery voltage?
Check power harness for continuity. Replace as necessary.
Reconnect the power harness to the controller.
Open the control panel. Disconnect the main harness from the control panel harness.
Insert the multimeter probes into the terminal with the red wire (pin 7) and the terminal with the black wire (pin 13) on the back of the main harness connector 7a. See figure 14.
0VDC?
24VDC or battery voltage?
Replace the controller.

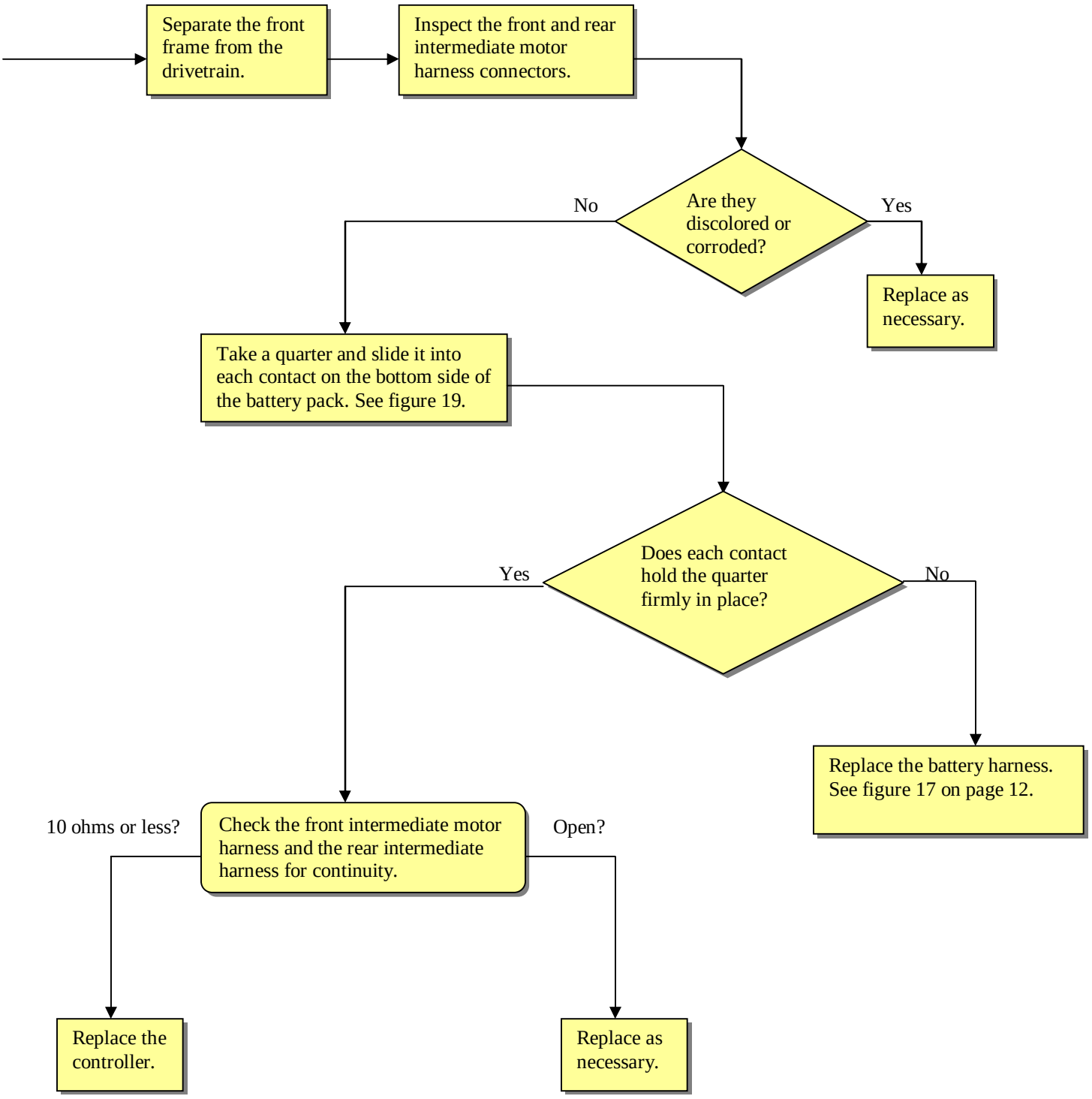

Measure voltage across pin 3 (black wire) and pin 8 (red wire) on connector 7b. See figure 15.
0VDC?
24VDC or battery voltage?
Replace the main harness.
Replace the control panel.

SCENARIO 2: BATTERIES WILL NOT CHARGE

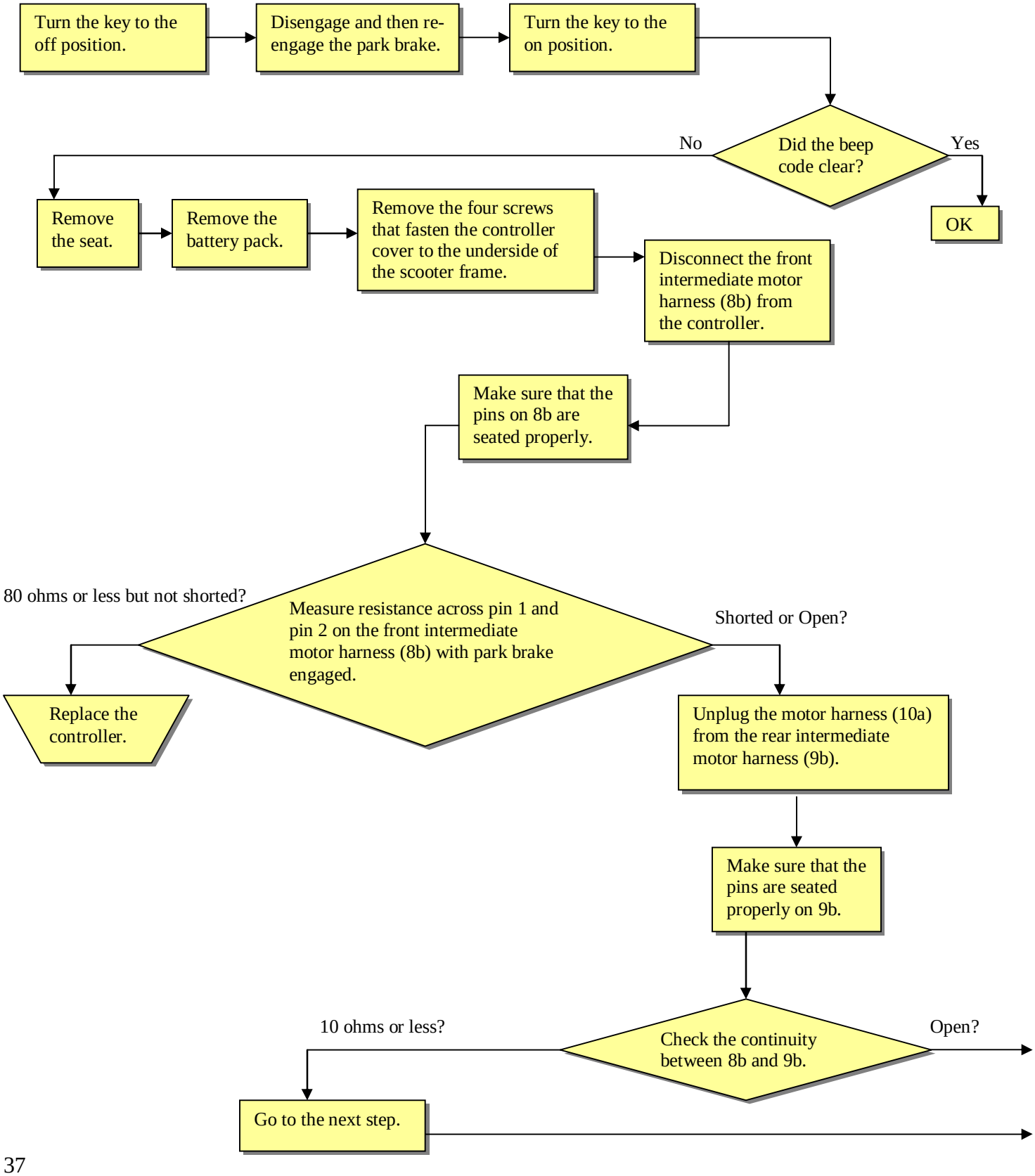

Remove the battery pack.
Plug the charger into the charger port and then into a wall outlet.
Measure the voltage across terminal 1 and terminal 3 on 4a. See figure 16.
Does the voltage increase?
Yes?
No? ï And there is no voltage.
Load test the batteries and replace as necessary.
No? ï But there is voltage.
If the voltage is lower than 16VDC, then replace the batteries. If the voltage is 16VDC or greater, then go to the next step.
Open the battery pack.
Open the battery pack and check the circuit breaker and the battery harness for continuity. Replace the individual components as necessary.
Less than 10 ohms?
Check the battery harness fuse for continuity.
Open?
Check circuit breaker and wire harnesses for continuity. Replace as necessary.
Replace the fuse. See figure 17.

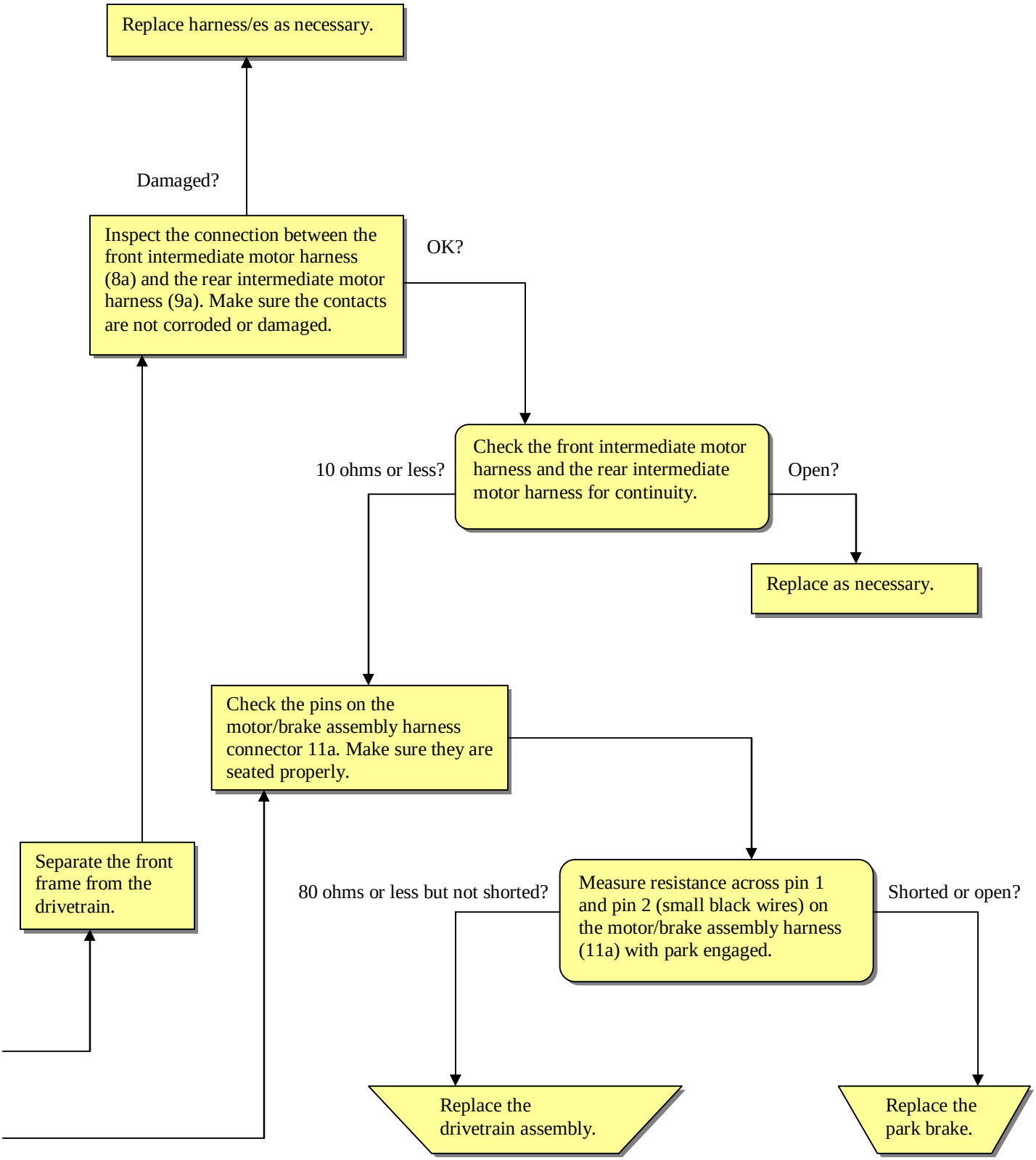
BEEP CODE #4 - CURRENT LIMIT TIMEOUT


Remove the seat.
Remove the battery pack.
Inspect the connection between the motor/brake assembly (10a) and the rear intermediate motor harness (9b).
Are either connectors discolored or melted?
Yes
No
Replace drivetrain assembly or rear intermediate motor harness as necessary.
Disconnect the motor (10a) from the rear intermediate motor harness (9b).
Measure resistance across the two pins on connector 10a that have the thick black wire and the thick red wire (internal resistance of the motor).
Out of that range?
50 ohms or less but not shorted?
Note: Can be as low as 0.2 ohms.
Replace the drivetrain assembly.
Remove the four screws that fasten the controller cover to the underside of the scooter frame.
Disconnect the front intermediate motor harness (8c and 8d) from the controller.
Make sure that the pins are seated properly on 9b. Check the continuity between 8c/8d and 9b.
10 ohms or less?
Open?
Replace the controller.

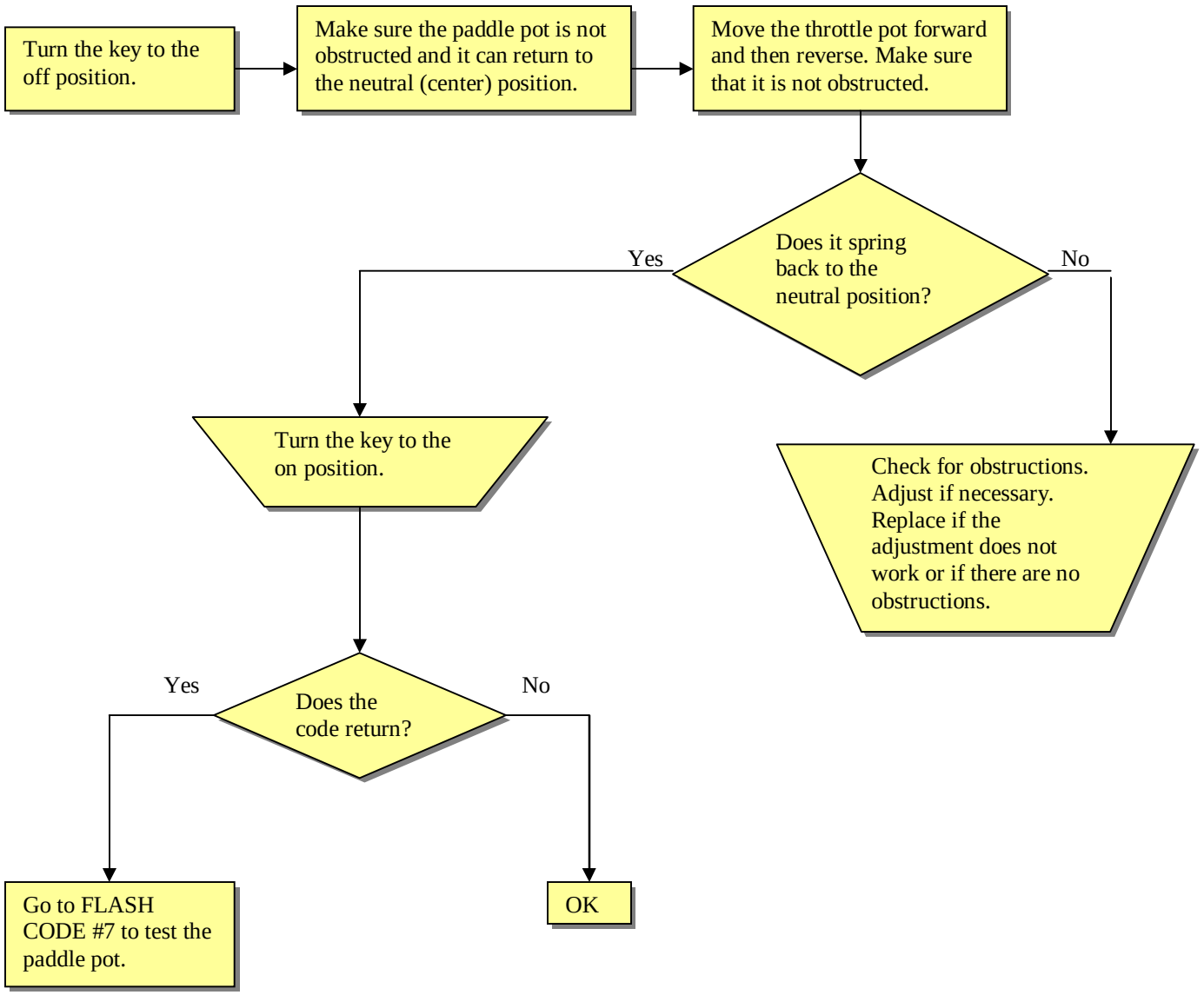

Separate the front frame from the drivetrain.
Inspect the front and rear intermediate motor harness connectors.
Are they discolored or corroded?
No
Yes
Replace as necessary.
Take a quarter and slide it into each contact on the bottom side of the battery pack. See figure 19.
Does each contact hold the quarter firmly in place?
Yes
No
Replace the battery harness. See figure 17 on page 12.
10 ohms or less?
Check the front intermediate motor harness and the rear intermediate harness for continuity.
Open?
Replace the controller.
Replace as necessary.

BEEP CODE 5: BRAKE FAULT

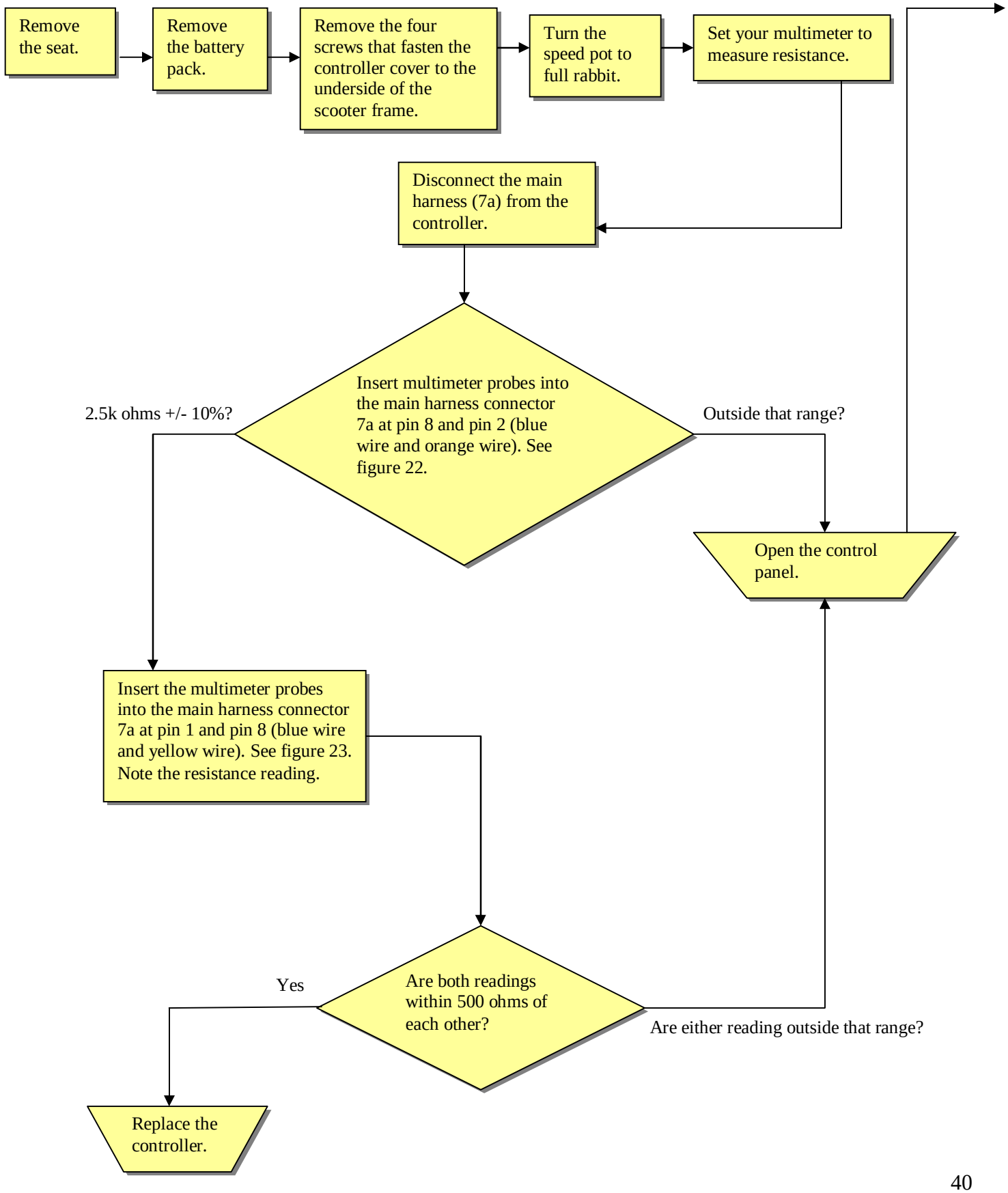

Turn the key to the off position.
Disengage and then re-engage the park brake.
Turn the key to the on position.
Did the beep code clear?
No
Yes
OK
Remove the seat.
Remove the battery pack.
Remove the four screws that fasten the controller cover to the underside of the scooter frame.
Disconnect the front intermediate motor harness (8b) from the controller.
Make sure that the pins on 8b are seated properly.
Measure resistance across pin 1 and pin 2 on the front intermediate motor harness (8b) with park brake engaged.
80 ohms or less but not shorted?
Shorted or Open?
Replace the controller.
Unplug the motor harness (10a) from the rear intermediate motor harness (9b).
Make sure that the pins are seated properly on 9b.
Check the continuity between 8b and 9b.
10 ohms or less?
Open?
Go to the next step.

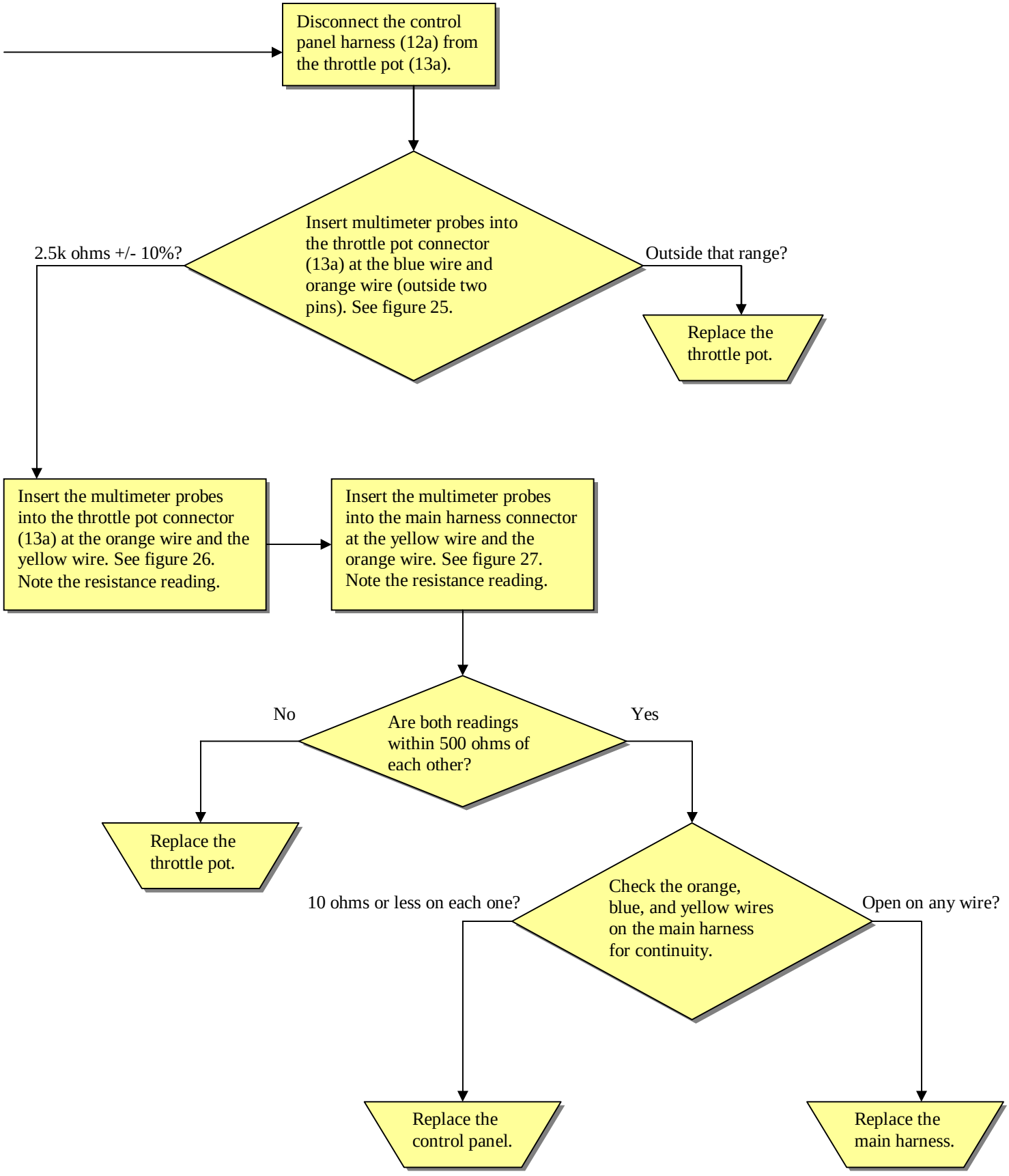

Replace harness/es as necessary.
Damaged?
Inspect the connection between the front intermediate motor harness (8a) and the rear intermediate motor harness (9a). Make sure the contacts are not corroded or damaged.
OK?
Check the front intermediate motor harness and the rear intermediate motor harness for continuity.
10 ohms or less?
Open?
Replace as necessary.
Check the pins on the motor/brake assembly harness connector 11a. Make sure they are seated properly.
Separate the front frame from the drivetrain.
80 ohms or less but not shorted?
Measure resistance across pin 1 and pin 2 (small black wires) on the motor/brake assembly harness (11a) with park engaged.
Shorted or open?
Replace the drivetrain assembly.
Replace the park brake.

BEEP CODE #6 - PADDLE FAULT (OUT OF NEUTRAL)

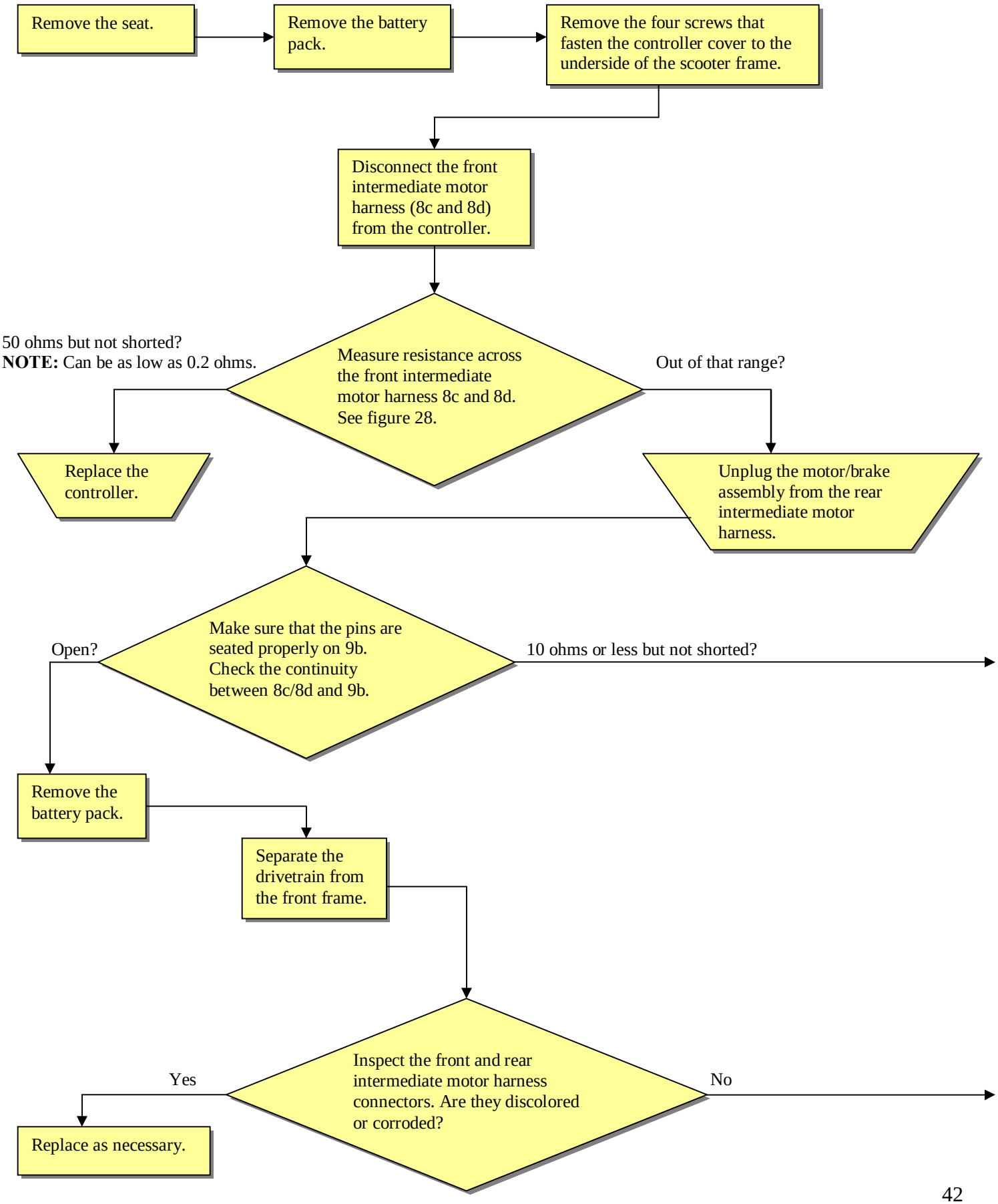

Turn the key to the off position.
Make sure the paddle pot is not obstructed and it can return to the neutral (center) position.
Move the throttle pot forward and then reverse. Make sure that it is not obstructed.
Does it spring back to the neutral position?
Yes
No
Turn the key to the on position.
Check for obstructions. Adjust if necessary. Replace if the adjustment does not work or if there are no obstructions.
Does the code return?
Yes
No
Go to FLASH CODE #7 to test the paddle pot.
OK

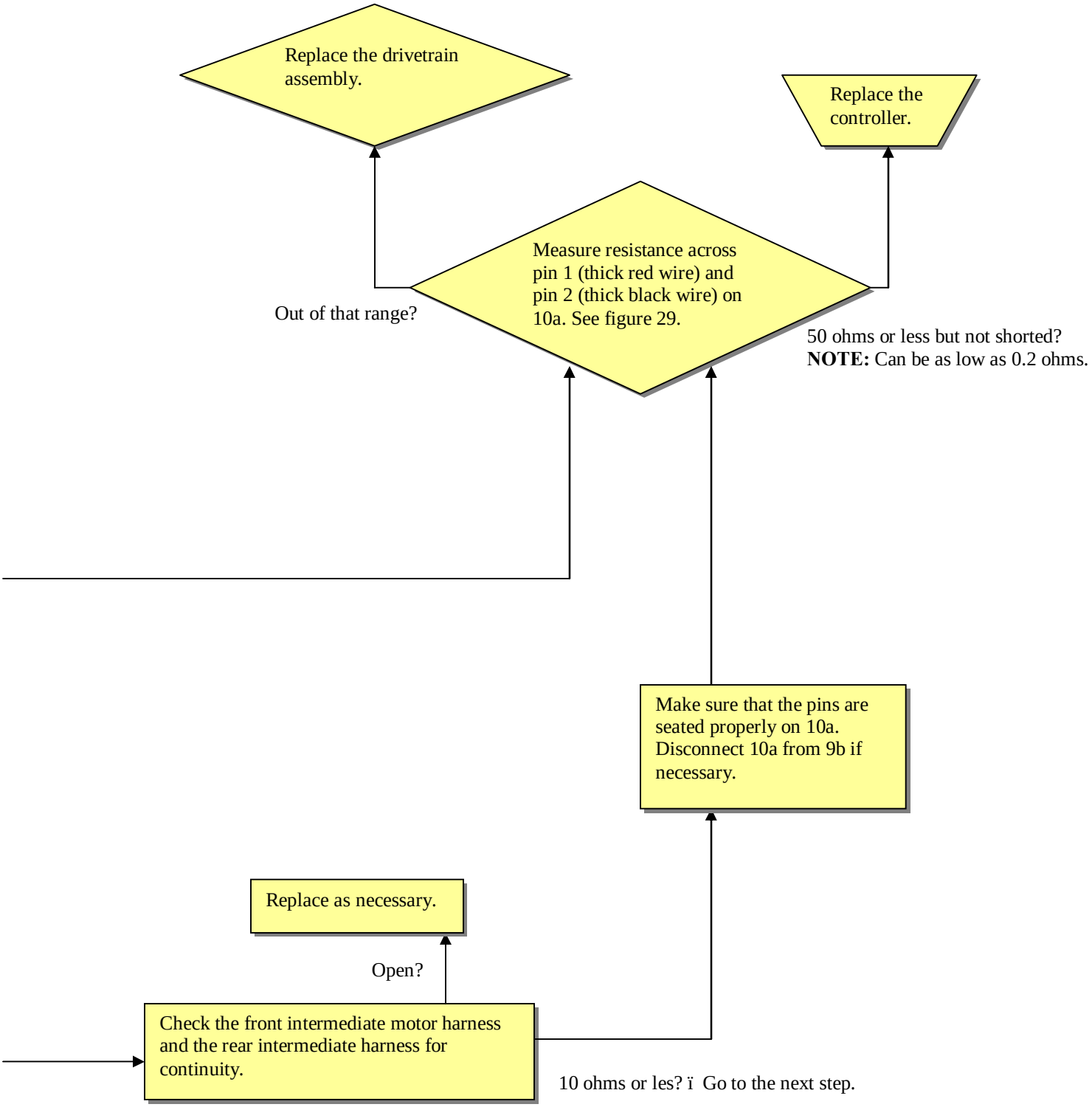
BEEP CODE #7 - PADDLE FAULT/SPEED CONTROL FAULT (VOLTAGE ERROR)


Remove the seat.
Remove the battery pack.
Remove the four screws that fasten the controller cover to the underside of the scooter frame.
Turn the speed pot to full rabbit.
Set your multimeter to measure resistance.
Disconnect the main harness (7a) from the controller.
Insert multimeter probes into the main harness connector 7a at pin 8 and pin 2 (blue wire and orange wire). See figure 22.
2.5k ohms +/- 10%?
Outside that range?
Open the control panel.
Insert the multimeter probes into the main harness connector 7a at pin 1 and pin 8 (blue wire and yellow wire). See figure 23. Note the resistance reading.
Are both readings within 500 ohms of each other?
Yes
Are either reading outside that range?
Replace the controller.


Disconnect the control panel harness (12a) from the throttle pot (13a).
Insert multimeter probes into the throttle pot connector (13a) at the blue wire and orange wire (outside two pins). See figure 25.
2.5k ohms +/- 10%?
Outside that range?
Replace the throttle pot.
Insert the multimeter probes into the throttle pot connector (13a) at the orange wire and the yellow wire. See figure 26. Note the resistance reading.
Insert the multimeter probes into the main harness connector at the yellow wire and the orange wire. See figure 27. Note the resistance reading.
Are both readings within 500 ohms of each other?
No
Yes
Replace the throttle pot.
Check the orange, blue, and yellow wires on the main harness for continuity.
10 ohms or less on each one?
Open on any wire?
Replace the control panel.
Replace the main harness.

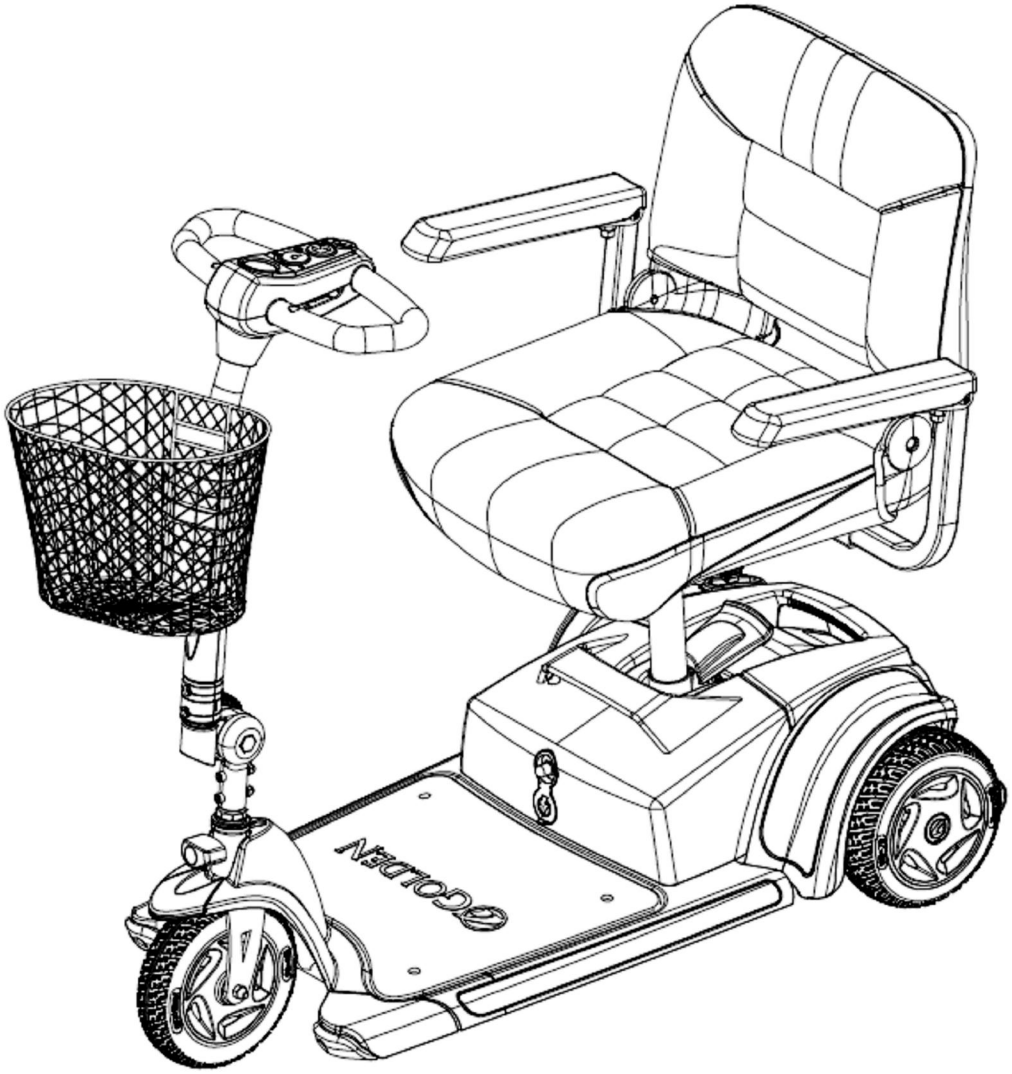
BEEP CODE #8 - MOTOR VOLTAGE FAULT (OPEN/SHORTED)


Remove the seat.
Remove the battery pack.
Remove the four screws that fasten the controller cover to the underside of the scooter frame.
Disconnect the front intermediate motor harness (8c and 8d) from the controller.
Measure resistance across the front intermediate motor harness 8c and 8d. See figure 28.
50 ohms but not shorted?
NOTE: Can be as low as 0.2 ohms.
Out of that range?
Replace the controller.
Unplug the motor/brake assembly from the rear intermediate motor harness.
Make sure that the pins are seated properly on 9b. Check the continuity between 8c/8d and 9b.
Open?
10 ohms or less but not shorted?
Remove the battery pack.
Separate the drivetrain from the front frame.
Inspect the front and rear intermediate motor harness connectors. Are they discolored or corroded?
Yes
No
Replace as necessary.

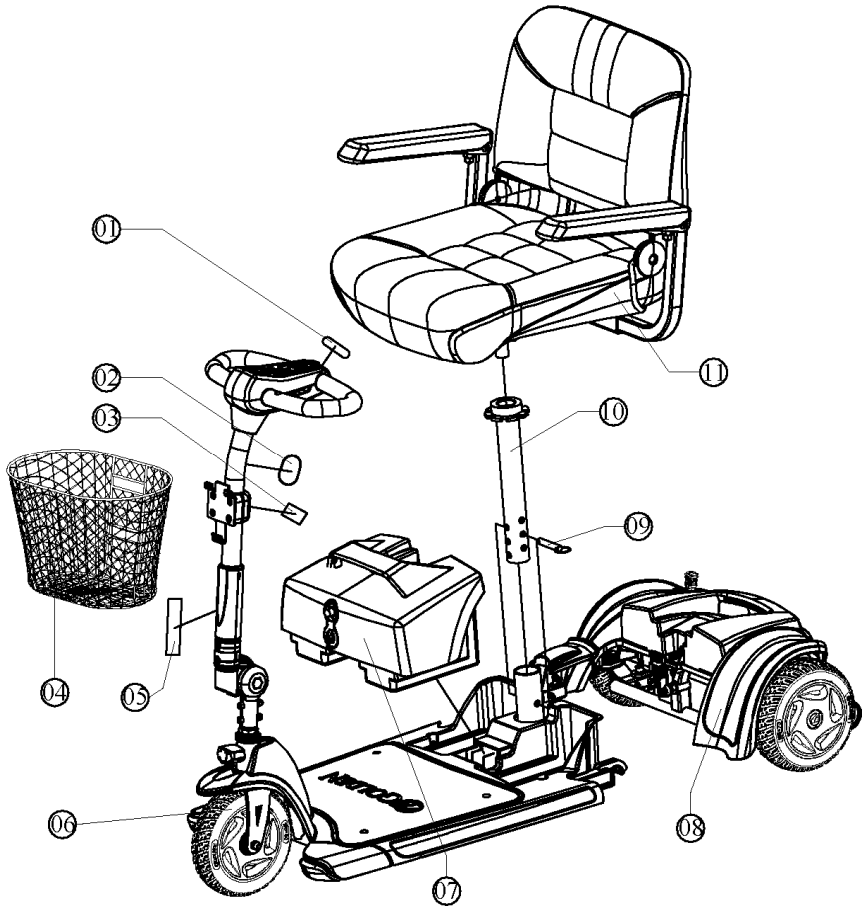

Replace the drivetrain assembly.
Replace the controller.
Measure resistance across pin 1 (thick red wire) and pin 2 (thick black wire) on 10a. See figure 29.
Out of that range?
50 ohms or less but not shorted?
NOTE: Can be as low as 0.2 ohms.
Make sure that the pins are seated properly on 10a. Disconnect 10a from 9b if necessary.
Replace as necessary.
Open?
Check the front intermediate motor harness and the rear intermediate harness for continuity.
10 ohms or les? ï Go to the next step.

ILLUSTRATED PARTS BREAKDOWN

Three Wheel Buzzaround XL

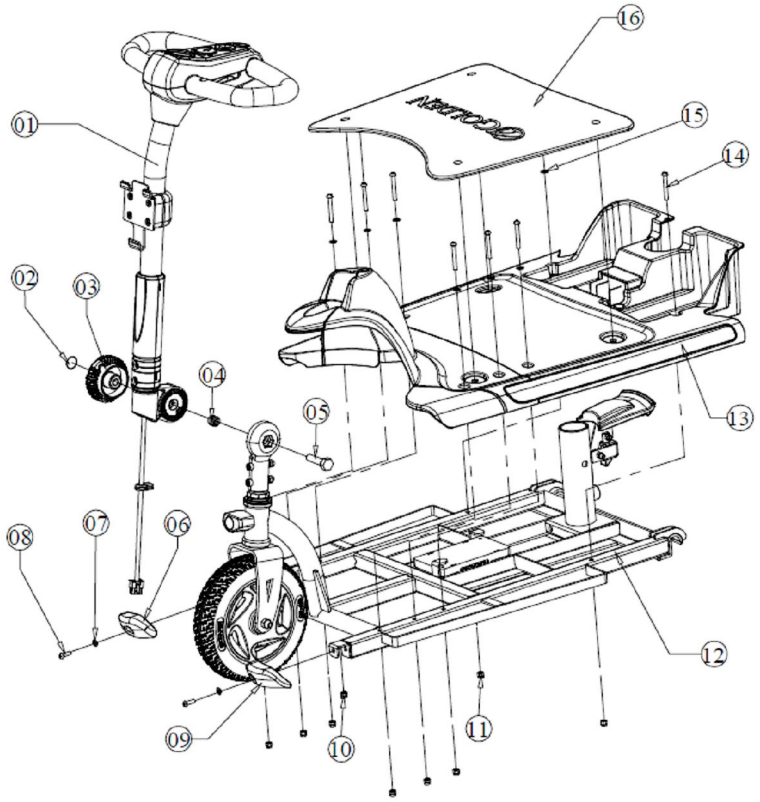


Model GB116



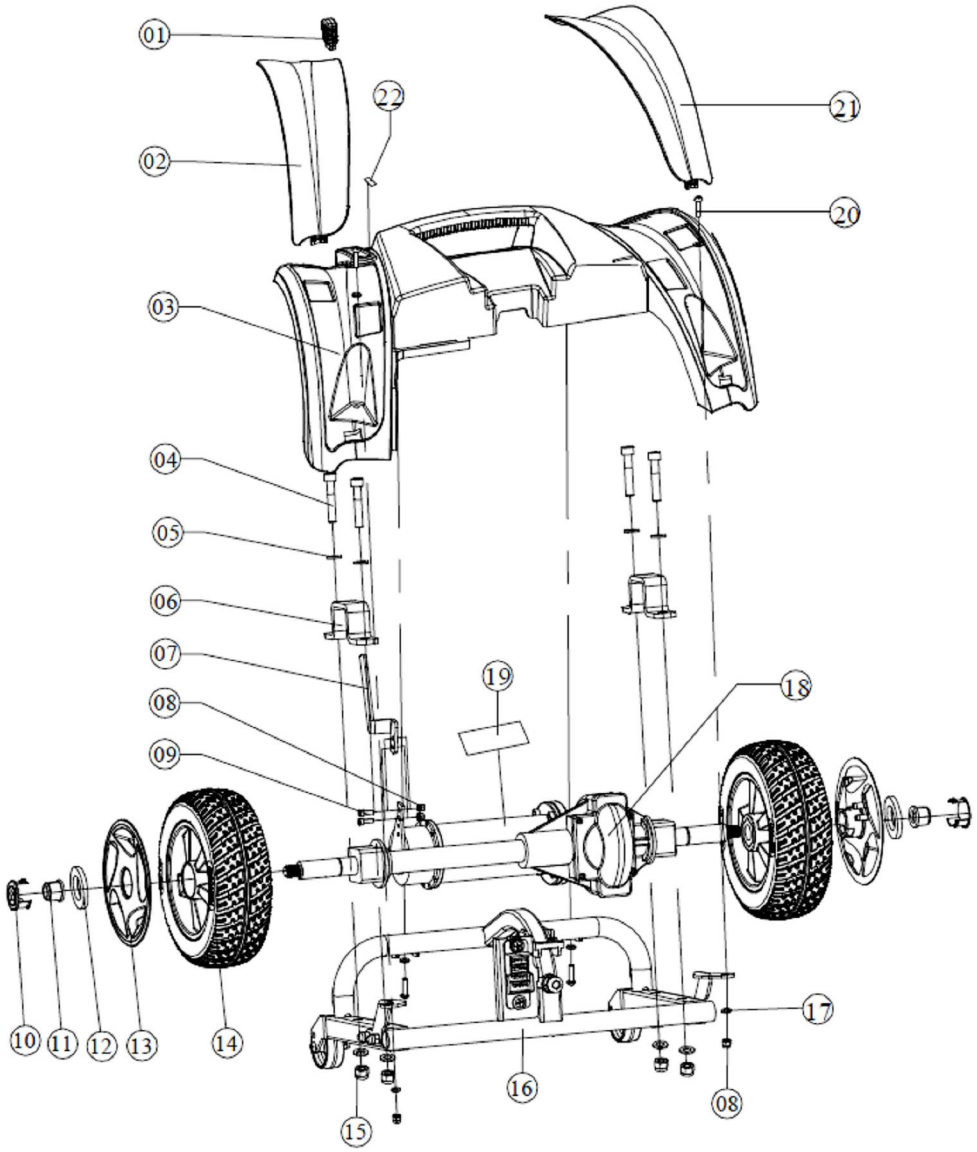
GB116D-STD-RB1-BLK

ITEM	PART NO.	DESCRIPTION	QTY
01	MBQ-LABELRPULLF-1	Label, Vinyl Pull for Forward and Reverse for GB106 AND GL110	1
02	MBQ-CO600ML	Label, Max Load 300 Pounds for Compass GP600M, Companion GC240 and Buzz XL, GB116	1
03	SB3P535A	Instruction label	1
04	MBH-B2FBASK	Basket, Front for Buzz GB106, Buzz XL GB116 and LiteRider GL110	1
05	SB3P536A	Tiller warning label	1
06	SE09E101	Front Part Assembly	1
07	SE09E601	Box, Battery Assembly with 12V 12 AH Batteries for Buzz XL GB116	1
08	SE09E102	Rear part assembly	1
09	SB3A105A	Pin, Seat Post ū 10*57	1
10	SE09E401	Post, Seat with Set Screw and Insert for Buzz XL GB116	1
11	SB05E401	Seat Assembly with Arms	2



Front Assembly (SE09E101)

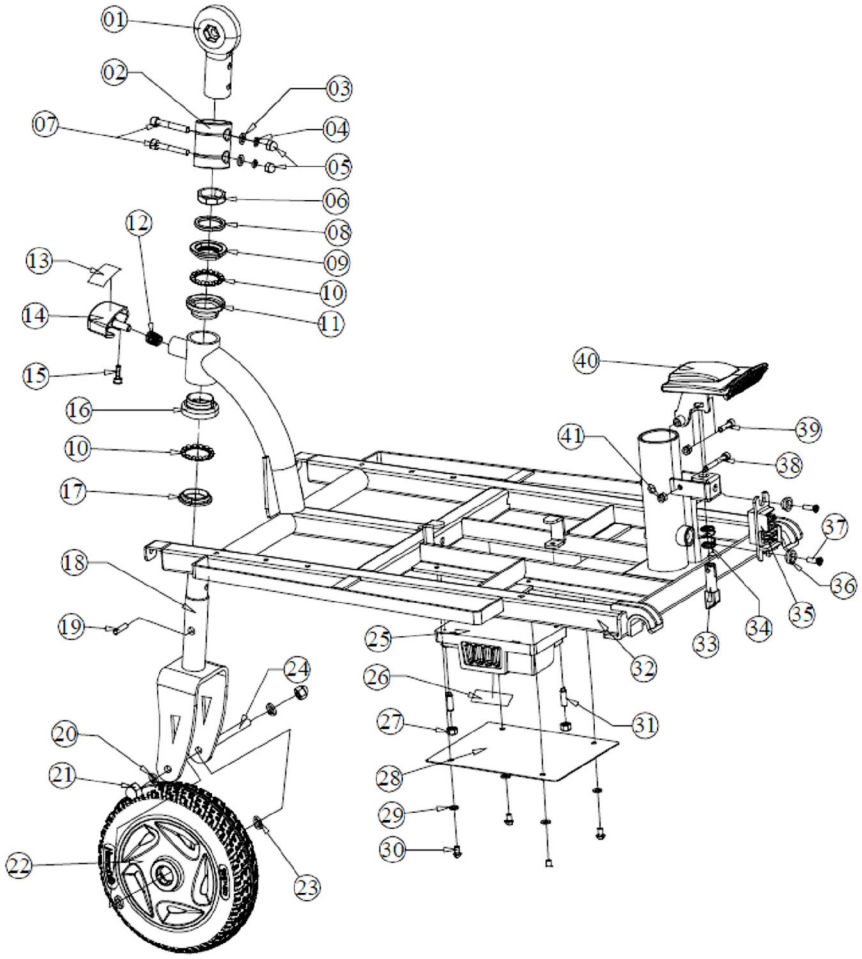
ITEM	PART NO.	DESCRIPTION	QTY
01	SE09E201	Tiller, Complete Assembly with Basket Bracket not including Colored Plastic for Buzz XL GB116	1
02	SB3P132A	Directional Label	1
03	SB3A501A	Tiller Adjust Knob	1
04	SA2P001A	Spring, Compression ū 2*ū 13*24 White Zinc	1
05	3110410452	Bolt, Hex M10*45 Black Zinc	1
06	SE09P517	Right front cap/ bumper	1
07	3000405032	Washer, Flat ū 5.5*ū 10*1 Black Zinc	4
08	3110605052	Screw, Phillips Pan Head M5*16L Black Zinc	2
09	SE09P516	Left front cap/ bumper	1
10	3100305011	Nut, Nylon M5 White Zinc	2
11	3100304011	Nut, Nylon M4 White Zinc	8
12	SE09E103	Front Frame Assembly with Front Fork and Wheel	1
13	SE09E501	Deck with Front Fender and Colored Sides	1
14	3110604121	Screw, Phillips Pan Head M4*35L	8
15	3000404041	Washer, Flat ū 4.3*ū 8*0.5	8
16	SE09E505	Carpet, for Buzz XL GB116	1



Rear Assembly (SE09E102)

ITEM	PART NO.	DESCRIPTION	QTY
01	WE03P510	Cap, Brake Handle Yellow	1
02	SE09E503	Panel, Rear Right Plastic Colored	1
03	SE09E502	Shroud, Black Rear Assembly for Buzz Xl GB116	1
04	3110308042	Bolt, Hex Head Socket M*45L Black Zinc	4
05	3000408042	Washer, Flat ū 8.4*ū 16*1.6 Black Zinc	8
06	SB3P137A	Motor Bracket	2
07	SE09P127	Brake Handle A3	1
08	3100304012	Nut, Nylon M4 White Zinc	4
09	3110304012	Bolt, Hex Head Socket M4*12L White Zinc	2

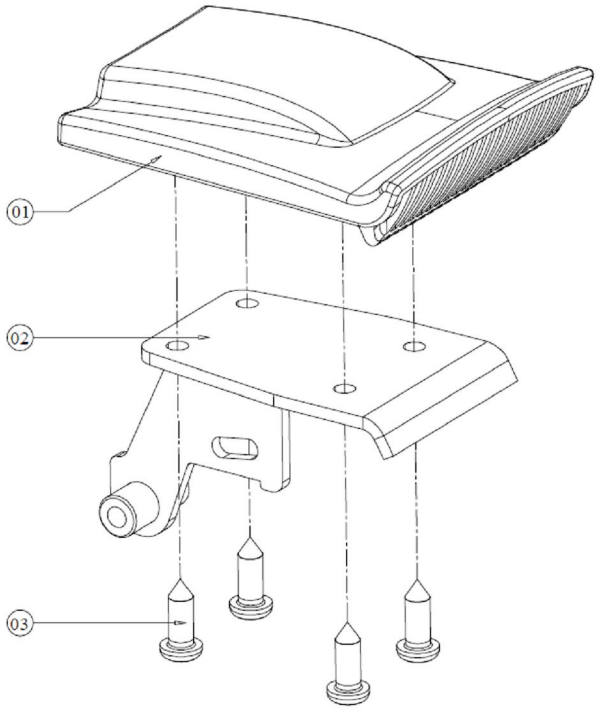
ITEM	PART NO.	DESCRIPTION	QTY
10	SB05P501	Cap, Rim for Buzz GB106 and Buzz XL GB116	2
11	3100312011	Nut, Nylon M12 White Zinc	2
12	SB05P216	Washer, Flat ū 13*ū 31.5*1	2
13	SB05P502	Cover, Wheel Rear for Buzz GB106 January 2010 and Buzz XL GB116	2
14	SB05A203	Wheel, Assembly Rear Complete Solid Black for Buzz GB106 January 2010 and Buzz XL GB116	2
15	3100308012	Nut, Nylon M8 Black Zinc	1
16	SE09E105	Frame, Rear with Anti-Tips for Buzz XL GB116	1
17	3000404051	Washer, Flat ū 4.3*ū 90*0.8 White Zinc	6
18	RA02E101	Transaxle, Assembly with Brake and Handle for Buzz XL GB116	1
19	3002330030	Transaxle Serial Sticker 30*13	1
20	3110604091	Screw, Phillips Pan Head M4*20L White Zinc	4
21	SE09E504	Panel, Rear Left Plastic Colored	1
22	SB3P5039A	Label, Freewheel	1



Front Frame Assembly (SE09E103)

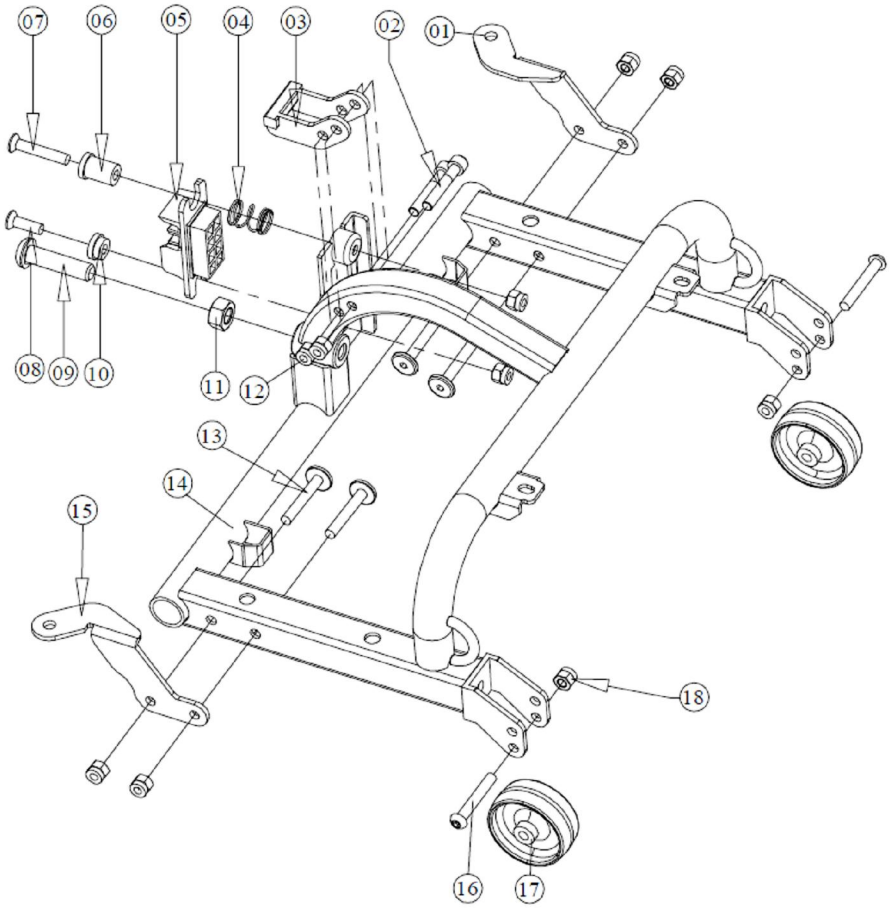
ITEM	PART NO.	DESCRIPTION	QTY
01	MBB-BLOTIL	Knuckle, Lower Tiller for Buzz GB101/103/104/105/106, and Buzz XL GB116	1
02	SB2P505A	Collar, Rubber for Lower Tiller	1
03	3000406072	Washer, Flat ū 6.2*ū 13*1.5 Black Zinc	2
04	3003106012	Washer, Spring ū 6 Black Zinc	2
05	3100206012	Nut, Cap M6 Black	2
06	3090400010	Nut, BC1ò-24 Black	1
07	3110306012	Screw, Hex Head Socket M6*35L Black Zinc	2
08	3090400020	Washer, Black	1
09	3090400030	Cap, Bearing Top	1
10	3090400040	Ring, Bearings	2

ITEM	PART NO.	DESCRIPTION	QTY
11	3090400050	Cup, Bearing Top ū 30	1
12	SB2P203A	Spring, Compression ū 1*ū 12*23.7L 65Mn	1
13	3002330010	Label, Tiller Lock Knob	1
14	MBH-BTLK	Knob, Tiller Locking (above wheel) for Buzz and Buzz Xl GB116	1
15	3110305012	Screw, Hex Head Socket M5*12L Black Zinc	1
16	3090400060	Cup, Bearing Bottom ū 30	1
17	3090400070	Cap, Bearing Bottom	1
18	MBB-B2FRONTF	Fork, Front for Buzz GB106	1
19	SB2P202A	Screw, ū 6*29L 20	1
20	3003108012	Washer, Spring ū 8 Black Zinc	2
21	3100208012	Nut, Cap M8 Black Zinc	2
22	SB05E203	Wheel, Assembly Front Complete Solid Black for Buzz GB106 January 2010 and Buzz XL GB116	1
23	3000408011	Washer, Flat ū 8.4*ū 16*1.6 Black Zinc	2
24	SB2P209A	Bolt, Axle M8*88L 45 White Zinc	1
25	3051600180	Controller, DR50-A01, 50A for Buzz Xl GB116	1
26	3002330030	Sticker, Barcode 30*13	1
27	3100106012	Nut, Hex M6	2
28	SE09P145	Cover, Controller for Buzz XL GB116	1
29	3003105011	Washer, Spring ū 5 White Zinc	4
30	3110605111	Screw, Phillips Pan Head M5*8L White Zinc	4
31	3111506032	Screw, Hex Head Socket Set M6*25L Black Zinc	2
32	SE09A101	Frame, Front Metal Only for Buzz XL GB116	1
33	SE09P129	Pin, Frame Locking 45	1
34	SE09P128	Spring, Compression 65Mn White Zinc	1
35	MBE-B2TBFF	Housing, Front Connector for Buzz GB106 and Buzz XL GB116	1
36	SE09P532	Spacer ū 15*5.9L	2
37	3111005062	Screw, Phillips Head M5*14L	2
38	3110305062	Bolt, Hex Head Socket M5*35L Black Zinc	1
39	3110305052	Bolt, Hex Head Socket M5*20L Black Zinc	1
40	SE09E104	Handle, Release for Buzz XL GB116	1
41	3100305012	Nut, Nylon M5 Black Zinc	4



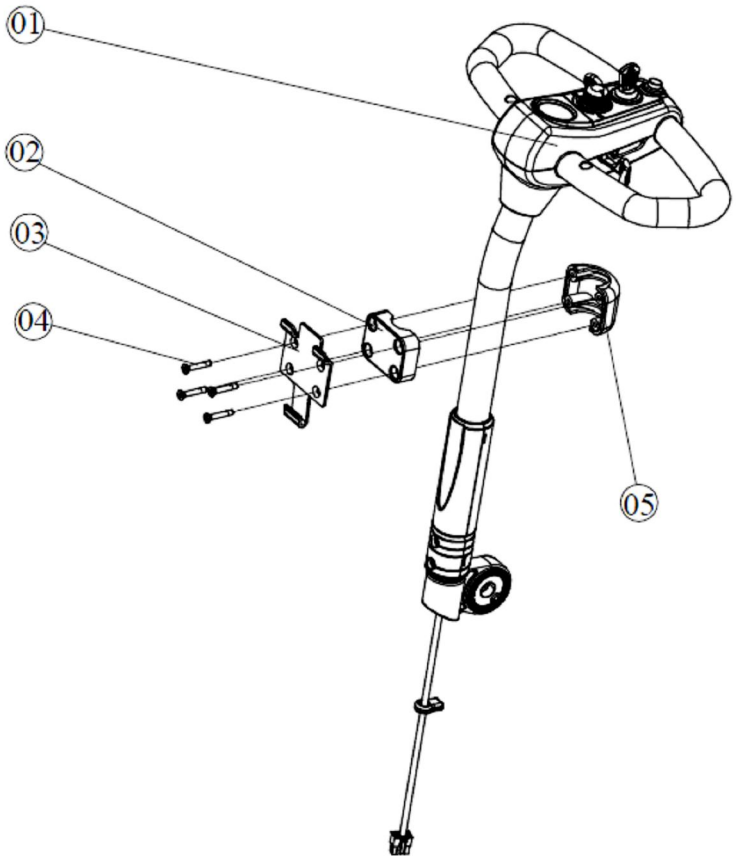
Release Handle (SE09E104)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE09P513	Cover, Handle	1
02	SE09A103	Handle, Metal only	1
03	3110904081	Screw, Phillips Head Self Tapping ST4.2*16L White Zinc	4



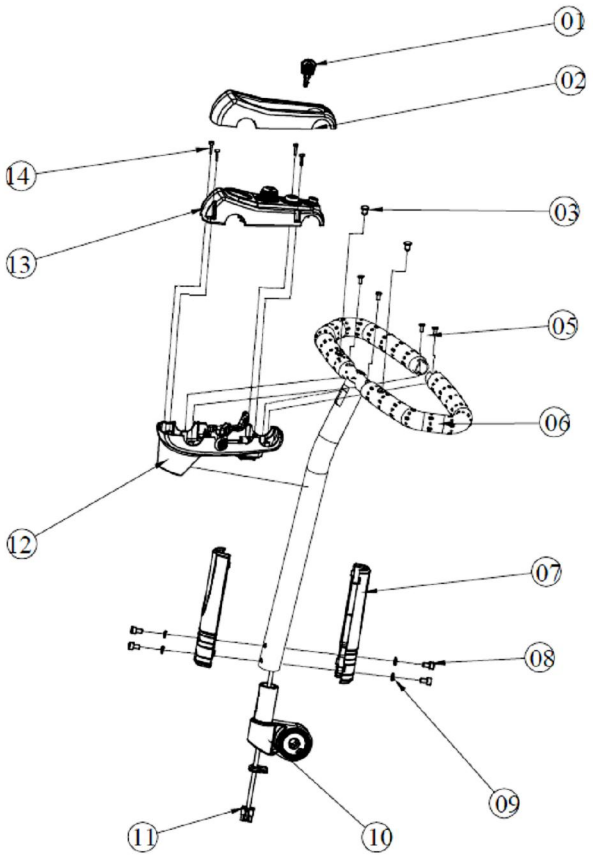
Rear Frame Assembly (SE09E105)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE09P124	Cover Mounting Bracket Left A3	1
02	3110306011	Screw, Hex Head Socket M6*35L White Zinc	2
03	SE09A104	Rear Locking Latch	1
04	SE09P128	Spring, Compression 65Mn White Zinc	1
05	SE09A602	Terminal, Rear Block	1
06	SE09P530	Spacer ū 15*20L	1
07	3111006042	Screw, Phillips M6*35L Black Zinc	1
08	3111006052	Screw, Phillips M6*20L Black Zinc	1
09	3110210012	Screw, Hex M10*40L Black Zinc	1
10	SE09P531	Spacer, ū 15*7L	1
11	3100106012	Nut, Hex M10 Black Zinc	1
12	3100308011	Nut, Nylon M6 White Zinc	2
13	3110206022	Screw, Hex Head M6*40L Black Zinc	4
14	SE09A102	Frame, Rear Metal Only	1
15	SE09P131	Cover Mounting Bracket Right A3	1
16	3110106012	Screw, Flat Head Socket M6*40L Black Zinc	2
17	3070505010	Wheel, Anti Tip ū 50*24	2
18	3100308012	Nut, Nylon M6 Black Zinc	8



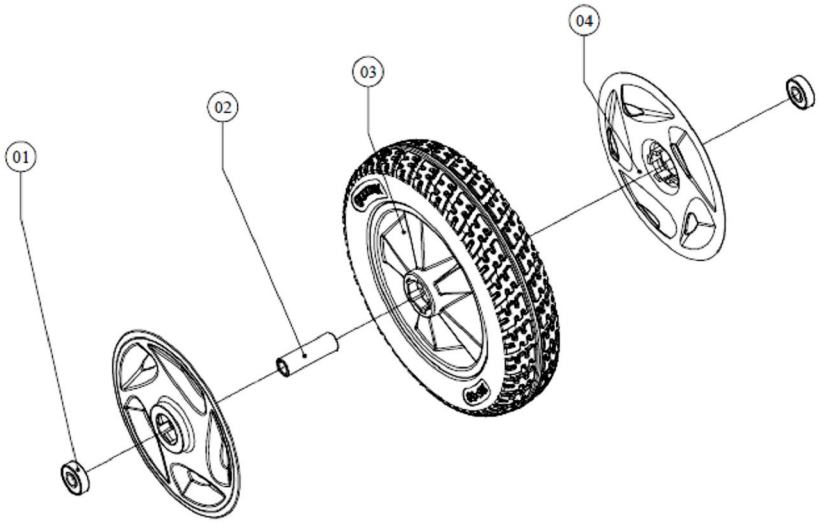
Tiller Assembly with Basket Hardware (SE09E201)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE09E202	Tiller, Assembly	1
02	SB3P521A	Plate, Front Basket Mounting Plastic	1
03	SB3P119A	Bracket, Front Basket	1
04	3111005302	Screw, Phillips M5*30 Black Zinc	4
05	SB3A503A	Shell, Front Basket Mounting Plastic	1



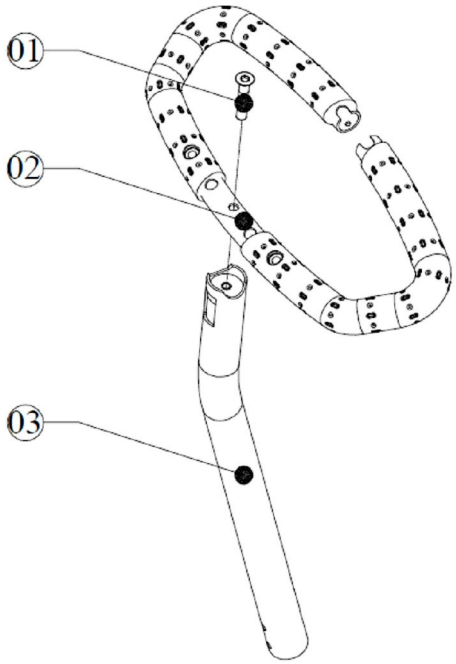
Tiller Assembly (SE09E202)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE06A621	Key	1
02	SE05P508BLUE	Cover, Dashboard Blue for Buzz GB106 January 2010 and LiteRider GL110	1
02	SE05P508RED	Cover, Dashboard Red for Buzz GB106 January 2010 and LiteRider GL110	1
03	SE06P221	Plug	2
04	SE05P214	Missing From Drawing	2
05	3110804131	Screw, Self Tapping ST3.5*13 White Zinc	4
06	SB05A202	Tiller, Metal only	1
07	SA2P519A	Cover, Tiller Front for LiteRider GL110, Same on Front and Rear on Buzz GB106 and Buzz XL GB116	2
08	3110306102	Screw, Hex Head Socket M6*10 8.8 Black Zinc	4
09	30003106012	Washer, Spring ū 6 White Zinc	4
10	SA2P215A	Knuckle, Upper	1
11	SE09A604	Harness, Main Wire (From Controller to Dash) for Buzz XL GB116	1
12	SE05E601	Dash, Bottom with Paddle	1
13	SE05E602	Dashboard, Top (Assembled Complete with Electrical Components) for Buzz GB106 after January 2010 TS09J0001, Buzz XL GB116 and LiteRider GL110	1
14	3110803131	Screw, Flat Head Self Tapping ST2.9*13 White Zinc	4



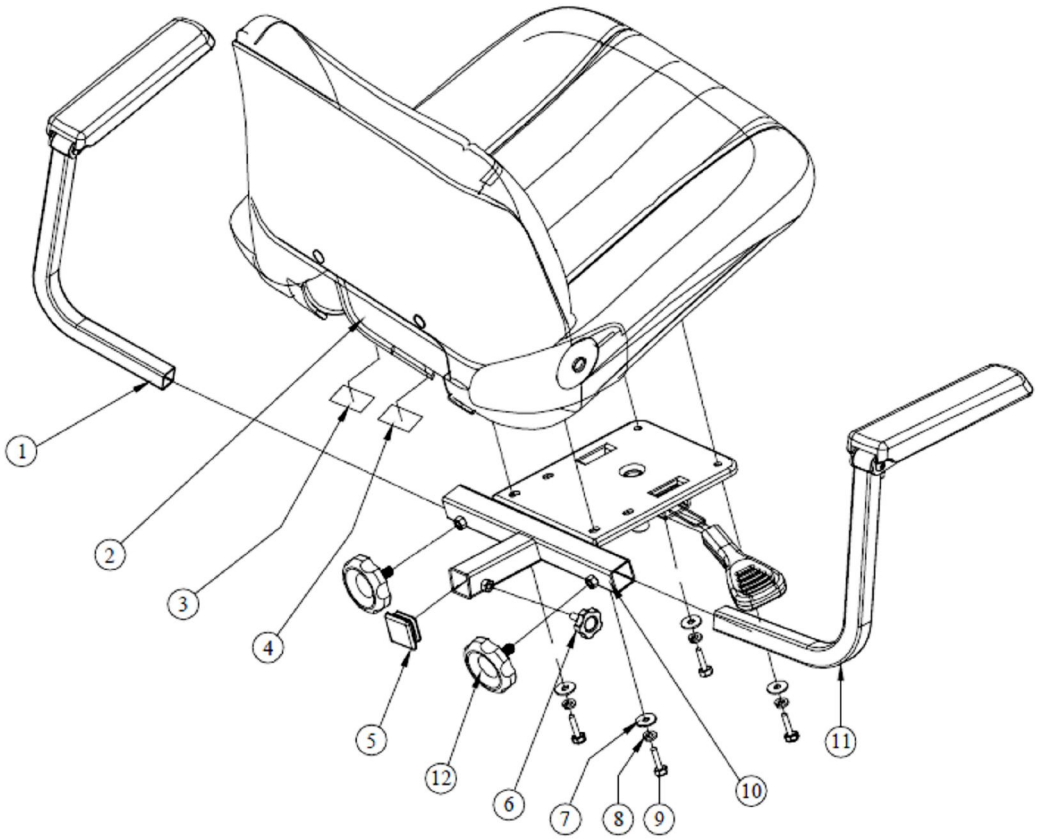
Front Wheel Assembly (SB05E203)

ITEM	PART NO.	DESCRIPTION	QTY
01	3090106080	Bearing, 608-2Z	1
02	SB2P208A	Spacer	2
03	SB05A201	Wheel, Front 8ò	2
04	SB05P503	Cover, Wheel Front for Buzz GB106 January 2010 and Buzz XL GB116	1



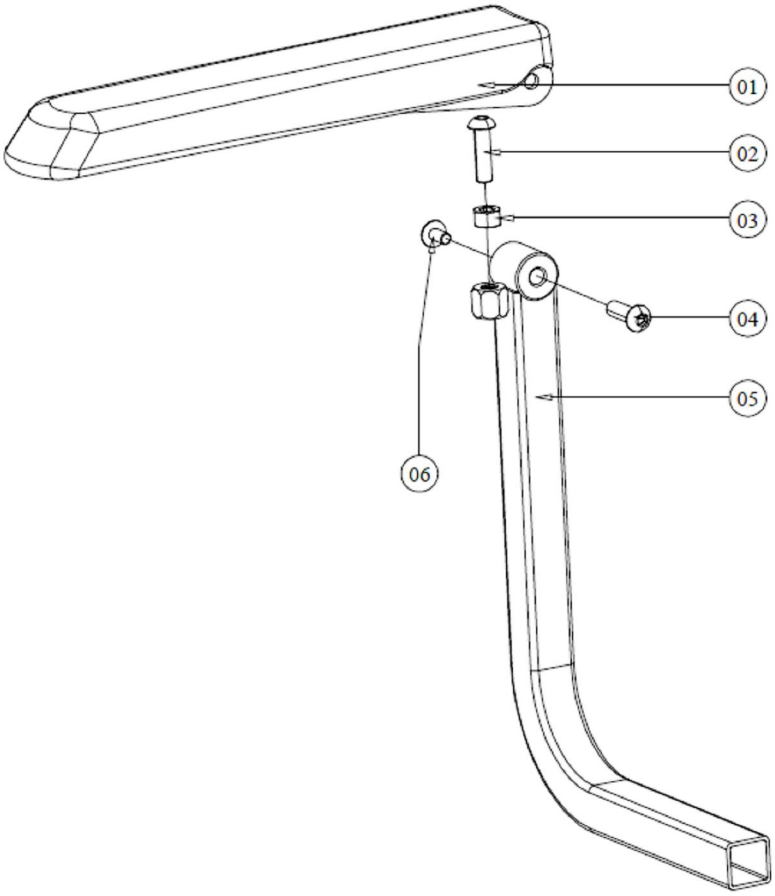
Tiller Handle (SB05E204)

ITEM	PART NO.	DESCRIPTION	QTY
01	311408022	Screw, Hex Head M8*40L 8.8 Black Zinc	1
02	SE05A205	Handle, Delta Tiller with Molded Grip for Buzz XL GB116	1
03	SB05A205	Post, Tiller	1



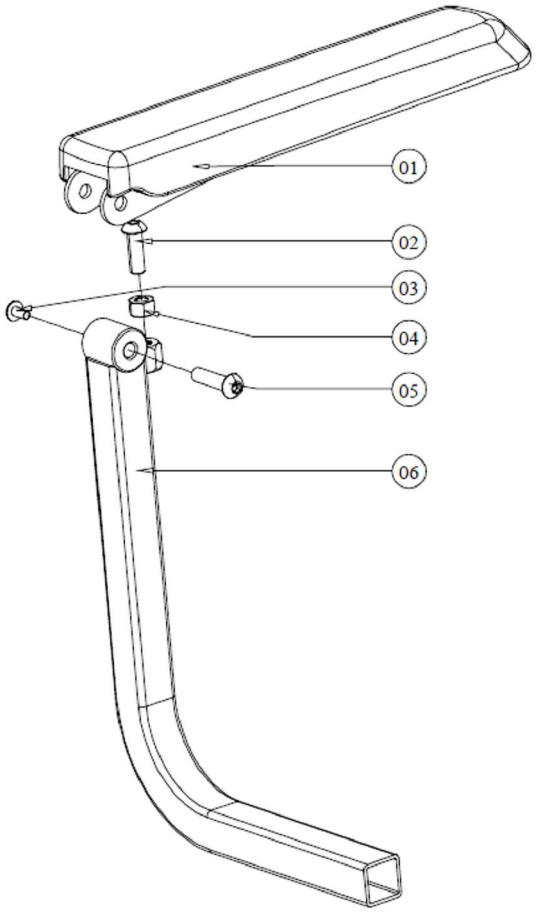
Seat Assembly (SB05E401)

ITEM	PART NO.	DESCRIPTION	QTY
01	WC6E401A	Arm, Assembly Left for LiteRider GL110 and Buzz GB106 January 2010 and Buzz XL GB116	1
02	WS61E100	Check with Ed. Description doesnôt match picture	1
03	3002300020	Label, Fire	1
04	3002300030	Label, Material	1
05	WC9P453A	End Cap 32*32*2.5	1
06	3111308010	Accessory Knob M8*20L	1
07	3000406032	Washer, Flat Ø8.4*Ø24*2 White Zinc	4
08	3003108011	Washer, Lock Ø8 White Zinc	4
09	3110408081	Bolt, Hex M8*25 White Zinc	4
10	SE1E403B	Seat Swivel Assembly	1
11	SB05E402	Arm, Assembly Right for LiteRider GL110 and Buzz GB106 after January 2010 TS09J0001 and Buzz XL GB116 XL	1
12	WC9P401A	Knob, Arm Width Adjustment	2



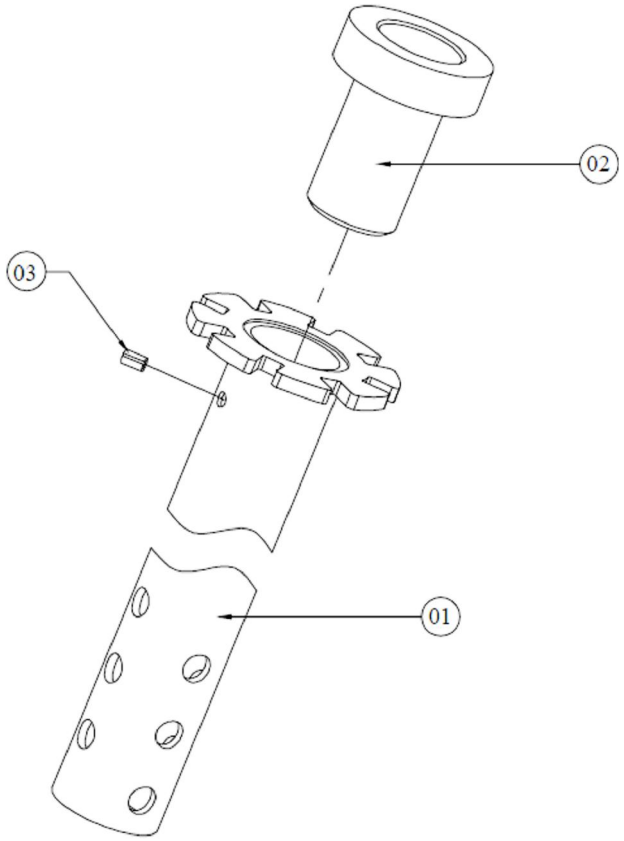
Right Arm Assembly (SB05E402)

ITEM	PART NO.	DESCRIPTION	QTY
01	WC6A405A	Pad, Arm for LiteRider GL110, Buzz GB106 and Buzz XL GB116	1
02	3110308072	Screw, Flat Head Socket M8*30L Black Zinc	1
03	3100108012	Nut, Hex M8 Black Zinc	1
04	3111706052	Screw, Lock Ø8/M6*33L Black Zinc	1
05	WC6A401A	Tube, Right Arm	1
06	3110106032	Screw, Socket Flat Head M6*12L Black Zinc	3



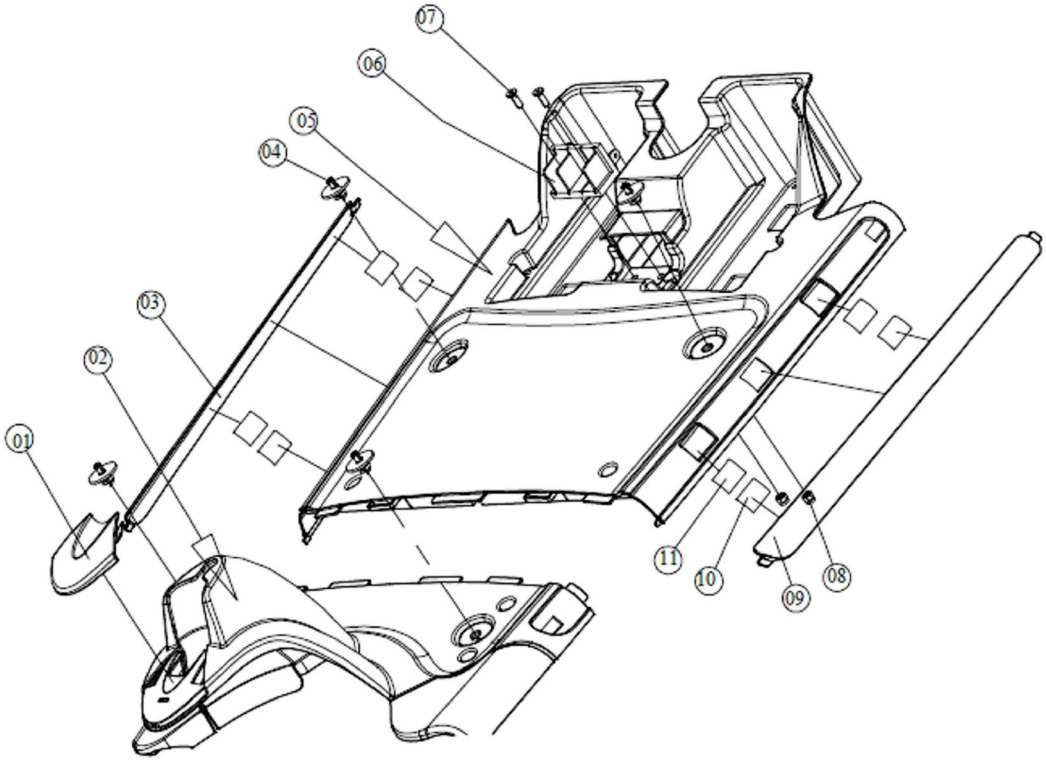
Left Arm Assembly (WC6E401A)

ITEM	PART NO.	DESCRIPTION	QTY
01	WC6A405A	Pad, Arm for LiteRider GL110, Buzz GB106 and Buzz XL GB116	1
02	3110308072	Screw, Flat Heat Socket M8*30L Black Zinc	1
03	3110106032	Screw, Flat Head Socket M6*12L Black Zinc	1
04	3100108012	Nut, Hex M8 Black Zinc	1
05	3111706052	Screw, Lock Ø8/M6*66L Black Zinc	1
06	WC6A402A	Tube, Left Arm	1



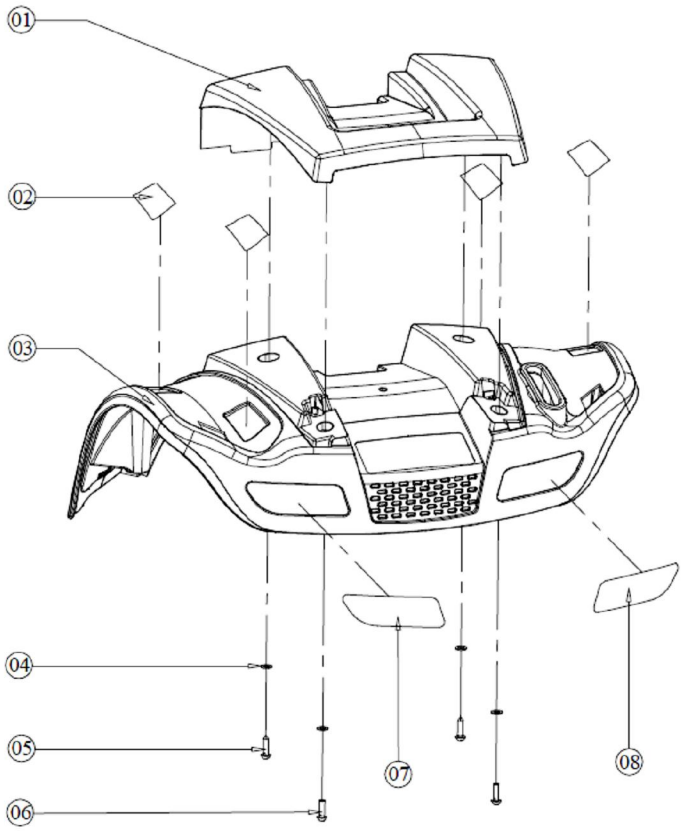
Seat Post Assembly (SE09E401)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE099A401	Seat Post Metal Only	1
02	SA2P419A	Insert, Seat Post PA66	1
03	3000604022	Pin, Spring ū 4*6L Black Zinc	1



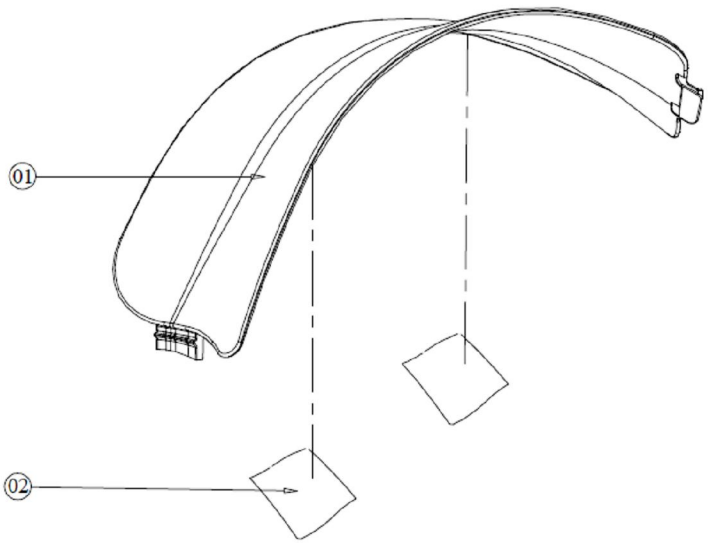
Front Deck Assembly (SE09E501)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE09P501	Panel, Front Deck Center Colored	1
02	SE09P507	Shroud, Front Black Plastic Only for Buzz XL GB116	1
03	SE09P51	Panel, Right Colored	1
04	SB3P526A	Anchor, Carpet	4
05	SE09P502	Deck, Front Black Plastic Only for Buzz XL GB116	1
06	SE09A601	Block, Terminal Blade Connector	1
07	31110050852	Screw, Hex M5*16 Black Zinc	2
08	3100305012	Nut, Nylon M5 Black Zinc	2
09	SE09P515	Panel, Left Colored	1
10	3000325180	Velcro, Loop 25*20	4
11	3000325170	Velcro Hook 25*20	4



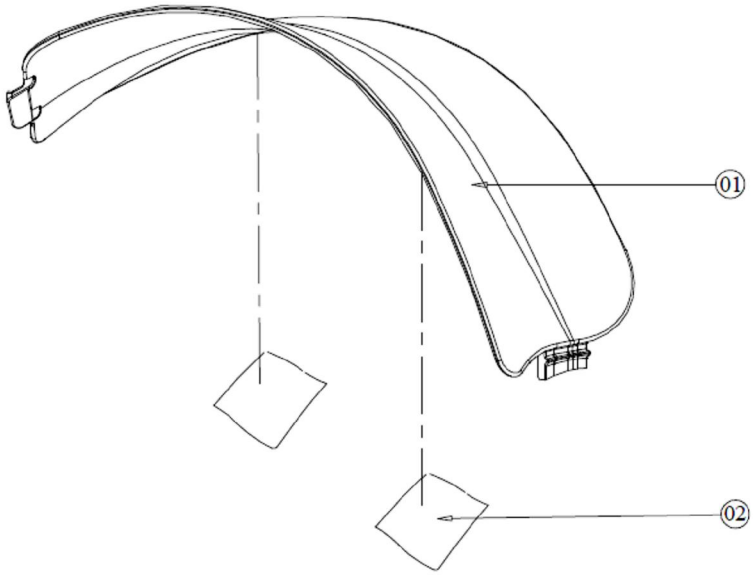
Rear Shroud Assembly (SE09E502)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE09A503	Handle, Rear Grab for Buzz XL GB116	1
02	3000325170	Velcro, Hook 25*20	4
03	SE09A504	Shroud, Rear Black for Buzz XL GB116	1
04	3000405031	Washer, Flat ū 5.5*ū 10*1 White Zinc	4
05	3110903032	Screw, Phillips Pan Head Self Tapping ST3.5*12L White Zinc	2
06	3110605052	Screw, Phillips Pan Head M5*16L White Zinc	2
07	SE09P550	Sticker, Left Rear Reflector	1
08	SE09P551	Sticker, Right Rear Reflector	1



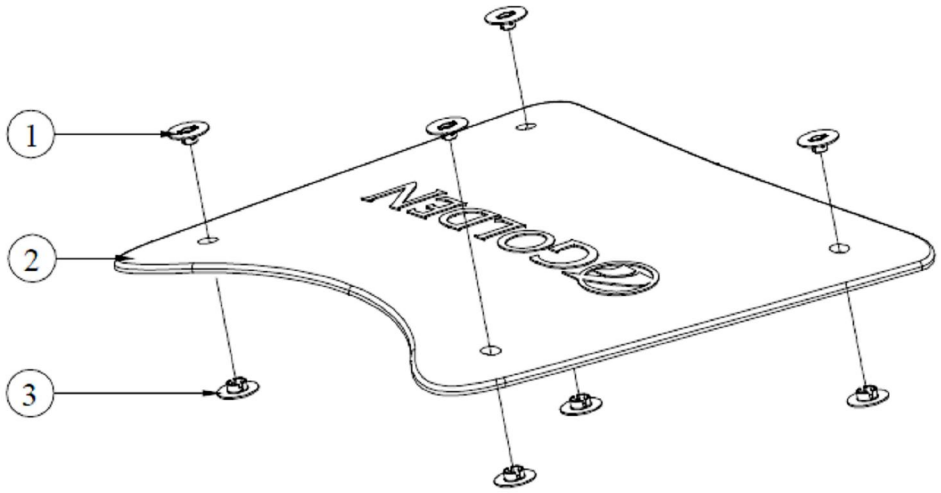
Right Rear Panel Assembly (SE09E503)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE09P510	Panel Right Rear Colored	1
02	3000325180	Velcro Loop 25*20	2



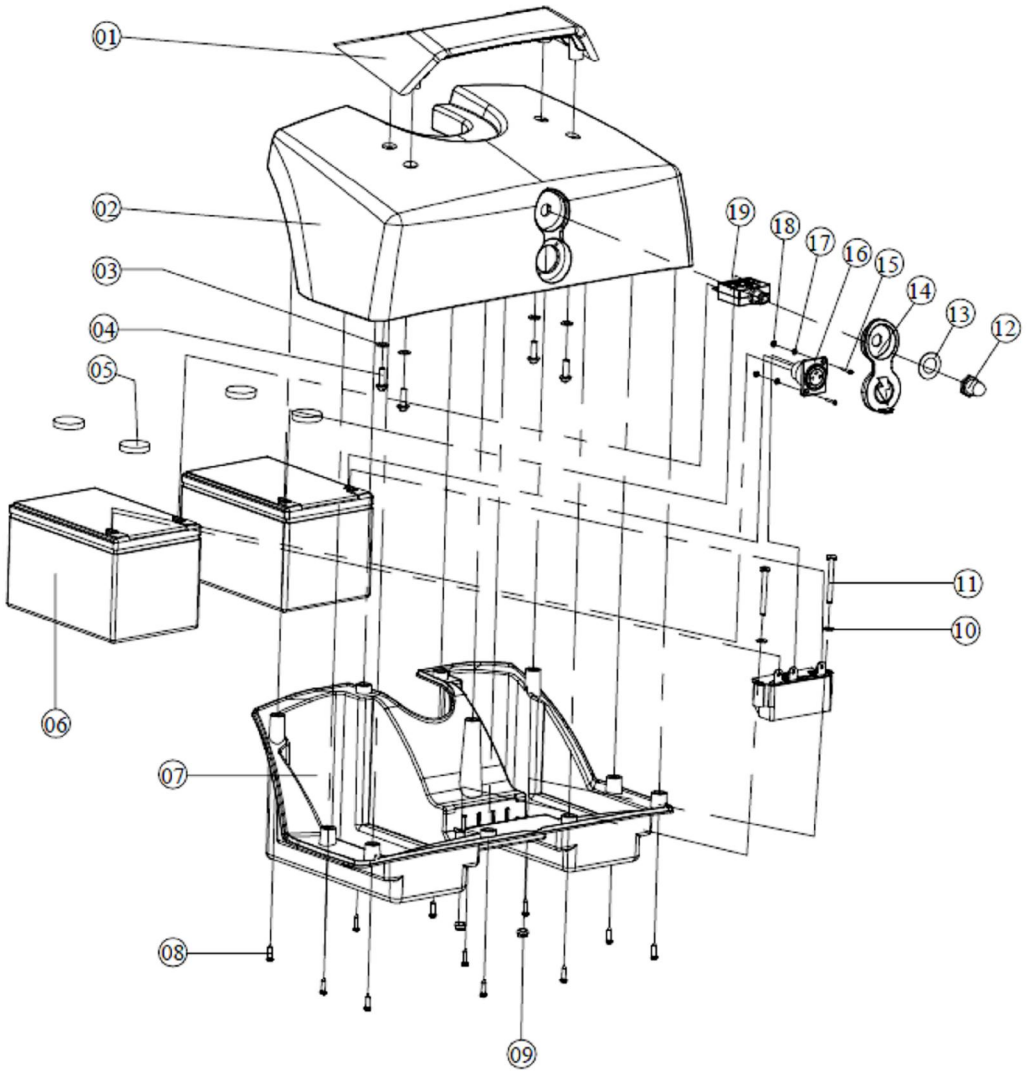
Left Rear Panel Assembly (SE09E504)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE09P511	Panel left Rear Colored	1
02	3000325180	Velcro Loop 25*20	2



Carpet Assembly (SE09E505)

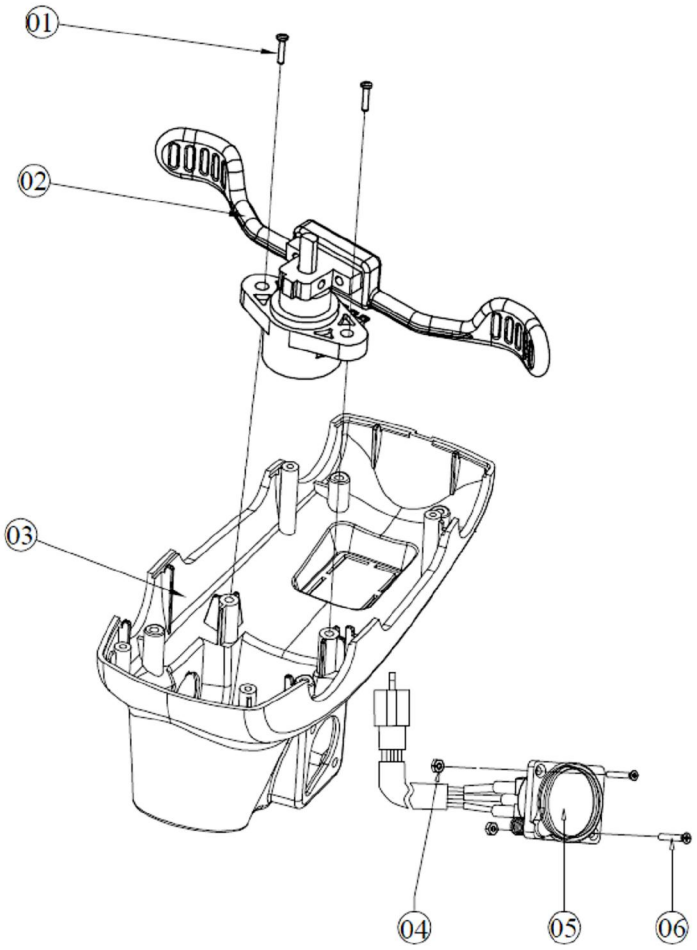
ITEM	PART NO.	DESCRIPTION	QTY
01	SB3P524A	Carpet Clip	4
02	SE09P519	Carpet	1
03	SB3P525A	Carpet Anchor	4



Battery Box Assembly (SE09E601)

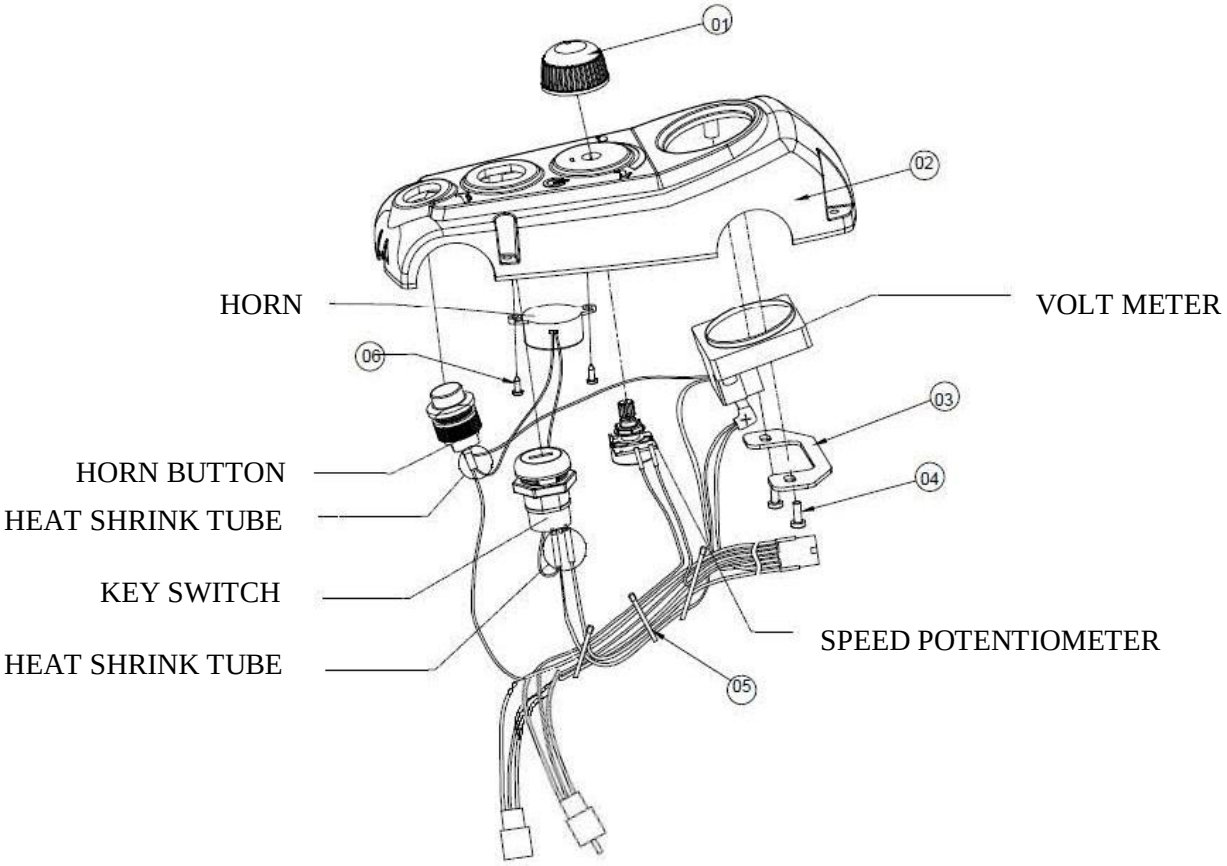
ITEM	PART NO.	DESCRIPTION	QTY
01	SE09A505	Handle, Battery Box for Buzz XL GB116	1
02	SE09P503	Cover, Battery Box	1
03	3000404031	Washer, Flat ū 4*ū 8*0.8 White Zinc	4
04	3110604011	Screw, Phillips Pan Head M4*12L White Zinc	2
05	SE09P540	Pad, ū 26*5	4
06	3052512010	Battery, 12V*12AH	2
07	SE09P504	Tray, Battery Box	1
08	3110903111	Screw, Phillips Pan Head ST3.5*16L White Zinc	11
09	3100304011	Nut, Nylon M4 White Zinc	2

ITEM	PART NO.	DESCRIPTION	QTY
10	3000404041	Washer, Flat ū 4.3*ū 8*0.5 White Zinc	2
11	3110604061	Screw, M4*40L White Zinc	2
12	3100511010	Nut, Waterproof	1
13	3000411010	Pad, t=0.5	1
14	MBE-B2CHARPC	Cover, Charger Port for Buzz GB106 and Buzz XL GB116	1
15	3110602022	Screw, M2.5*12L Black Zinc	1
16	MBE-B2CHARP	Port, Charger for Buzz GB106 and Buzz XL GB116	1
17	3000402022	Washer, Flat ū 2.7*ū 6*0.5 Black Zinc	2
18	3100102022	Nut, Hex M2.5	2
19	SE09E602	Fuse	1



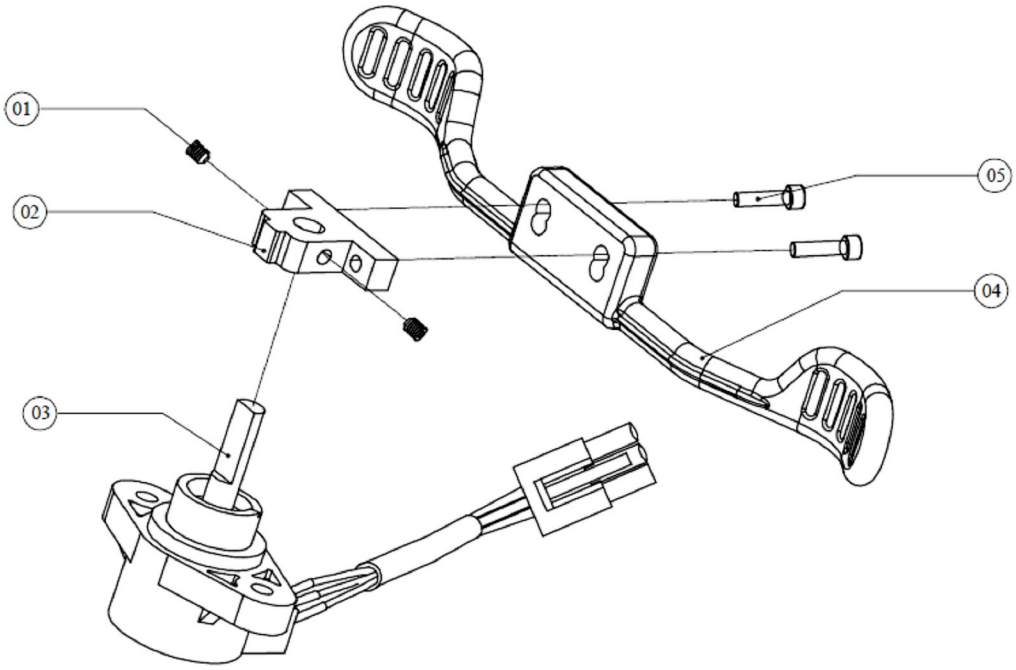
Lower Dash Assembly with Paddle (SE05E601)

ITEM	PART NO.	DESCRIPTION	QTY
01	3110103031	Screw, Flat Head Self Tapping ST3.5*16 White Zinc	2
02	SE05E603	Paddle Assembly	1
03	SE05P519	Panel, Lower Dashboard for Buzz XL GB116	1
04	3100102022	Nut, Hex M2.5 Black Zinc	2
05	SE05A612	Port, Programming on Dash for Buzz XL GB116	1
06	3111002022	Screw, Phillips Head M2.5*12L Black Zinc	2



Upper Dash Assembly (SE05E602)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE06P511	Knob, Speed control	1
02	SE05P509	Cover, Upper Dash	1
03	SB3P608A	Bracket	1
04	3110103011	Screw, Flat Head Self Tapping ST2.9*8 White Zinc	2
05	SE05A601	Harness, Dash	1
06	3110902012	Screw, Phillips Pan ST2.2*8 Black Zinc	2

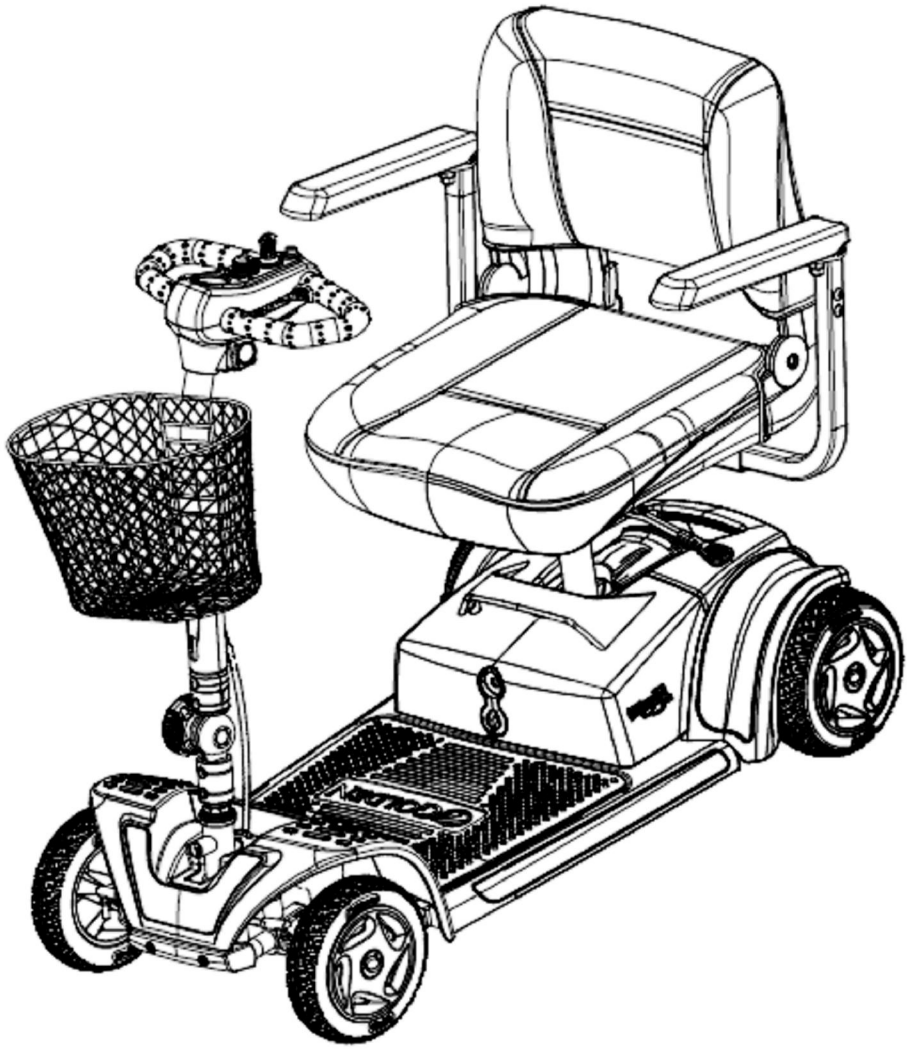


TOCOS 5KVR (SE05E603)

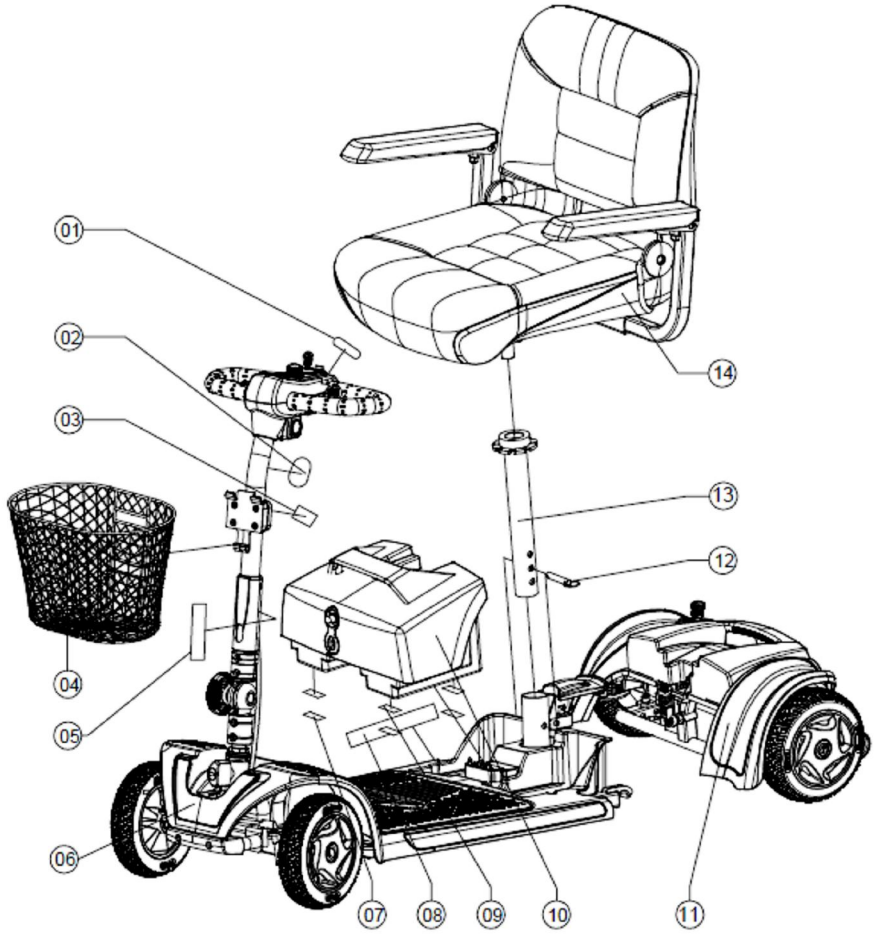
ITEM	PART NO.	DESCRIPTION	QTY
01	3111504022	Screw, Hex Set M4*6L Black Zinc	2
02		Bracket	1
03	SE05A602	Potentiometer	1
04	SE05P511	Paddle, Plastic Only	1
05	3110704081	Screw, Flat Head M4*12 White Zinc	2

ILLUSTRATED PARTS BREAKDOWN

Four Wheel Buzzaround XL

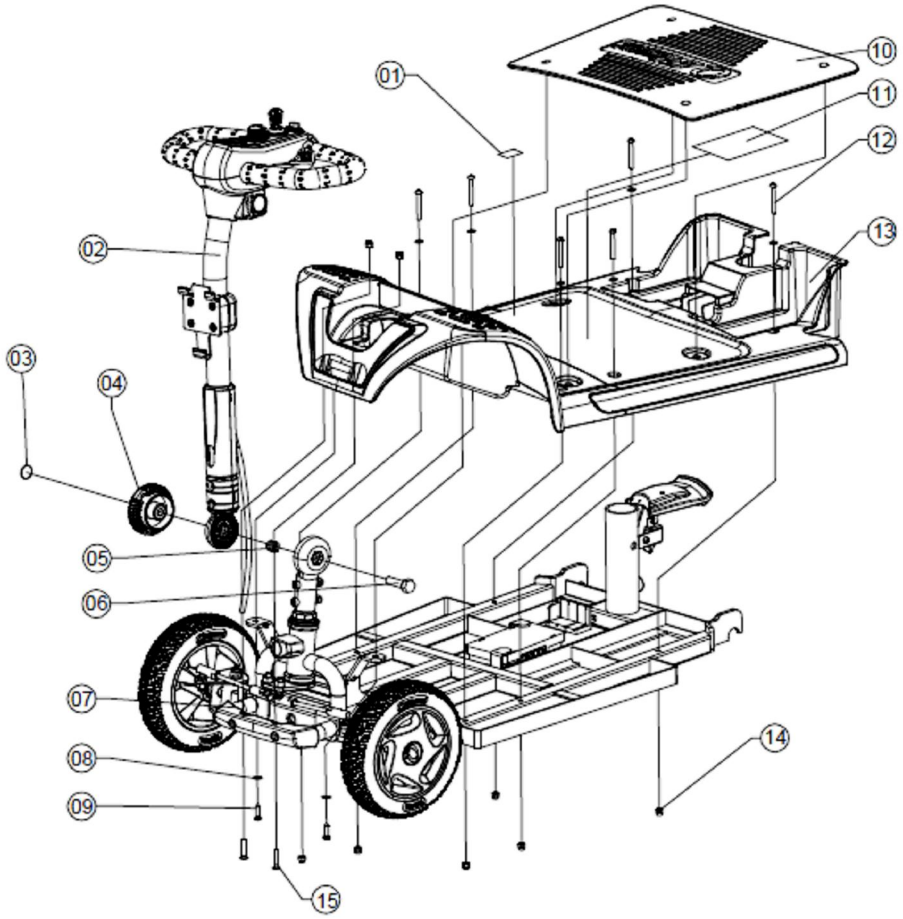


Model GB146



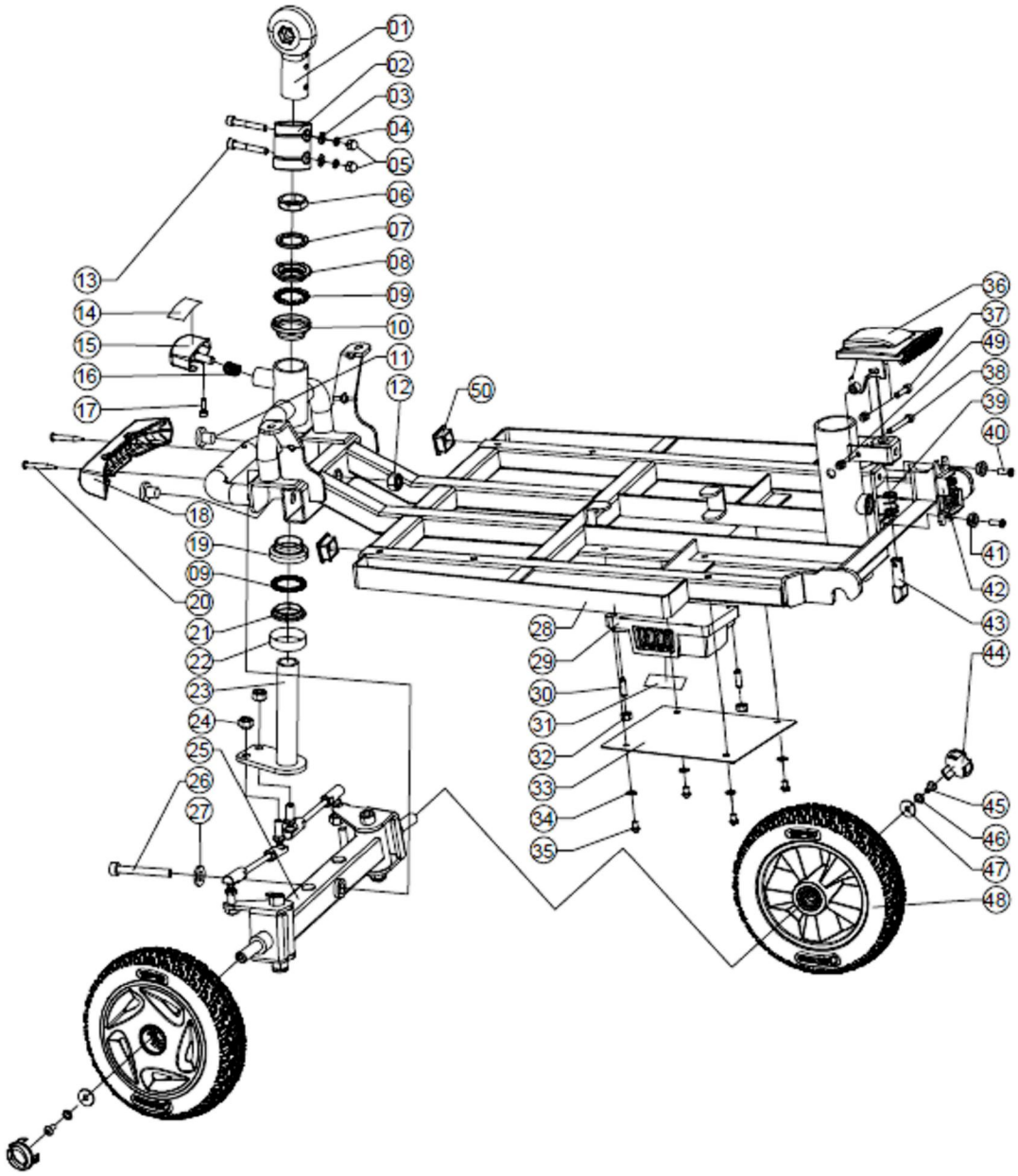
Whole Unit Assembly (SF01E001)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE05P518	Push/ Pull Decal	1
02	SE1P526A	Weight Limit 300 LBS Sticker	1
03	SB3P535A	Scooter manual instructions stickers	1
04	SB3A106A	Basket	1
05	SB3P536A	Tiller Warning Decal	1
06	SF01E101	Front body assembly	1
07	3000325130	Velcro	4
08	SB3A613A	Battery Decal	1
09	3000325120	Velcro	4
10	SE09E601	Battery box assembly	1
11	SE09E102	Rear part assembly	1
12	SB3A105A	Seat Post Pin	1
13	SE09E401	Seat Post	1
14	SB05E401	Seat Assembly with Arms	1



Front Parts Assembly (SF01E101)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE09P554	Serial number stickers	1
02	SF01E201	Tiller Assembly	1
03	SB3P132A	Tiller Adjust Knob Sticker	1
04	SB3A501A	Tiller Adjust Knob	1
05	SA2P001A	Spring, Compression ū 2 * ū 13 * 24 White Zinc	1
06	3110410452	Bolt, Hex M10 * 45L Black	1
07	SF01E102	Front frame assembly	1
08	3000404041	Washer, Flat ū 4.3 * ū 8 * 0.5 White Zinc	8
09	3110904051	Screw, Phillips Pan Self Tapping ST4.2 * 12L White Zinc	2
10	SF01P504	Carpet	1
11	SE09P556	Serial Label	1
12	3110604121	Screw, Phillips Pan M4 * 35L White Zinc	6
13	SF01E501	Deck	1
14	3100304011	Nut, Nylon M4 White Zinc	8
15	3111004062	Screw, Phillips M4 * 35L Black Zinc	2

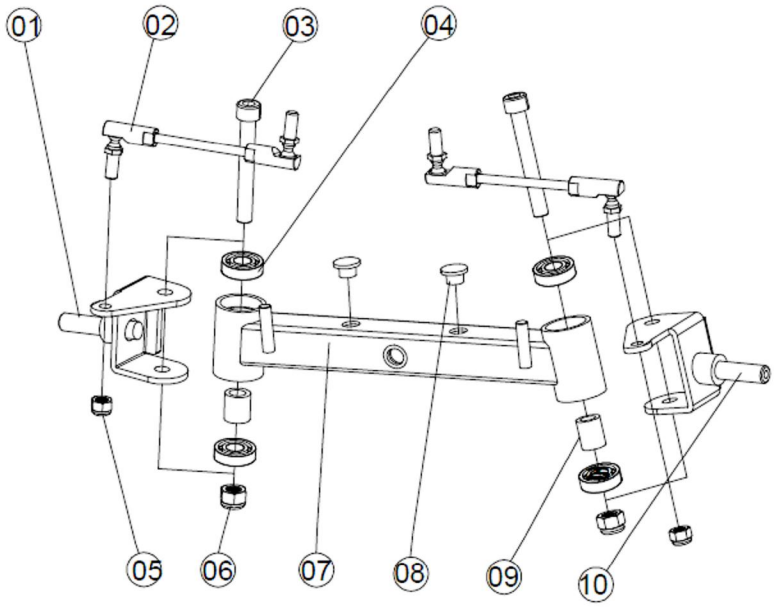


Front Frame Assembly (SF01E102)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE05P208	Tiller Knuckle Bottom	1
02	SB2P505A	Collar	1
03	3000406072	Washer, Flat ū 6.2 * ū 13 * 1.5 Black	2
04	3003106012	Spring washers ū 6 Black	2
05	3100206012	Nut, Cap M6 Black	2
06	3090400010	Nut, Black	1
07	3090400020	Gasket	1
08	3090400030	Cap, Bearing	1

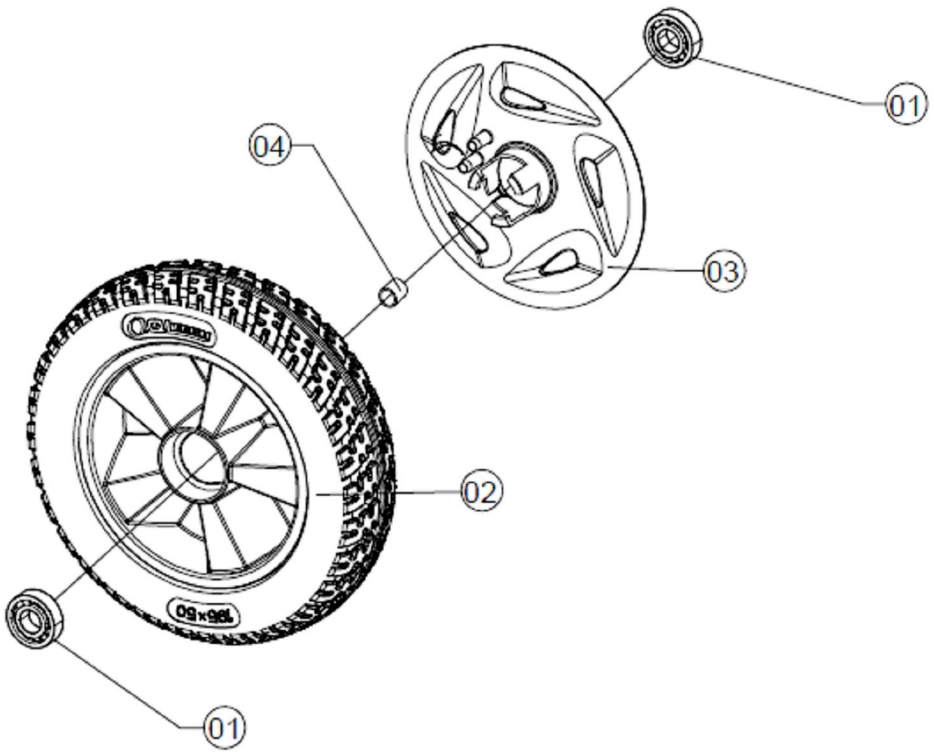
ITEM	PART NO.	DESCRIPTION	QTY
09	3090400040	Bearing ring	2
10	3090400050	Cup Bearing	1
11	SA2P139A	Plug, Rubber	2
12	3100312022	Nut, Nylon M12 Black	1
13	3110306012	Screw, Hex Socket M6 * 35L Black	2
14	SB3P534A	Decal	1
15	SB2A201A	Knob	1
16	SB2P203A	Spring, Compression ū 1 * ū 12 * 23.7L	1
17	3110305012	Screw, Hex Socket M5 * 12L Black	1
18	SF01P503	Front Bumper Cover	1
19	3090400060	Bearing Cup	1
20	3110904072	Screw, Phillips Self Tapping ST4.2 * 13L White Zinc	2
21	3090400070	Bearing Cap	1
22	WC5P210A	Bushing, ū 27 * ū 0.8 * 7 White Zinc	1
23	SF01A204	Steering Beam	1
24	3100308012	Nut, Nylon M8 Black	2
25	SF01E103	Front Steering Bar	1
26	3110312059	Screw, Hex Socket Head M12 * 85L Black	1
27	3000412012	Washer, Flat ū 12.5 * ū 23 * 2.5 Black	1
28	SF01A101	Front Frame, Metal Only	1
29	3051600180	Controller	1
30	3111506032	Screw, Hex Socket M6 * 20 Black	2
31	3002330030	Serial Sticker	1
32	3100106012	Nut, Hex M6 Black	2
33	SE09P145	Controller Cover	1
34	3003105011	Washer, Spring ū 5 White Zinc	4
35	3110605061	Screw, Phillips M5 * 10L White Zinc	4
36	SE09E104	Frame Release Handle	1
37	3110305052	Bolt, Hex Socket M5 * 20L Black	1
38	3110305062	Bolt, Hex Socket M5 * 35L Black	1
39	SE09P128	Spring, Compression White Zinc	1
40	3111005062	Screw, Phillips M5 * 14L Black	2

ITEM	PART NO.	DESCRIPTION	QTY
41	SE09P532	Washer	2
42	SE09A603	Motor Connector Front	1
43	SE09P129	Pin, White Zinc	1
44	SB05P501	Cap, Wheel Cover Silver	2
45	3110108031	Screw, Flat M5 * 12L White Zinc	2
46	3003105011	Washer, Spring ū 5 White Zinc	2
47	3000406022	Washer, Flat ū 6 * ū 19 * 1.5 White Zinc	2
48	SF01E104	Wheel 8ò	2
49	3100305012	Nut, Nylon M5 Black	2



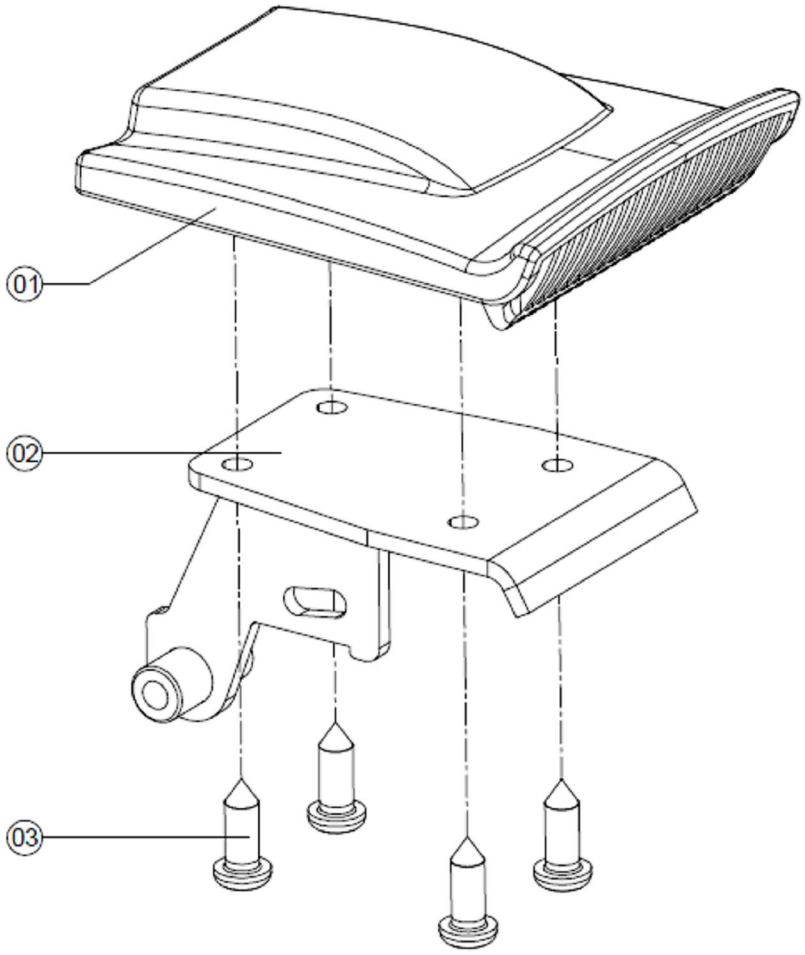
Steering Assembly (SF01E103)

ITEM	PART NO.	DESCRIPTION	QTY
01	SF01A202	Right Steering Arm Bracket	1
02	SD01E203	Steering Rod Assembly	2
03	3110310102	Bolt, Hex Socket M10 * 75L Black	2
04	3090162001	Bearing 6200-2Z	4
05	3100308012	Nut, Nylon M8 Black	2
06	3100310012	Nut, Nylon M10 Black	2
07	SF01A201	Front Steering Bar	1
08	SA2P139A	Plug, Rubber	2
09	SD01P210	Spacer	2
10	SF01A203	Left Steering Arm Bracket	1



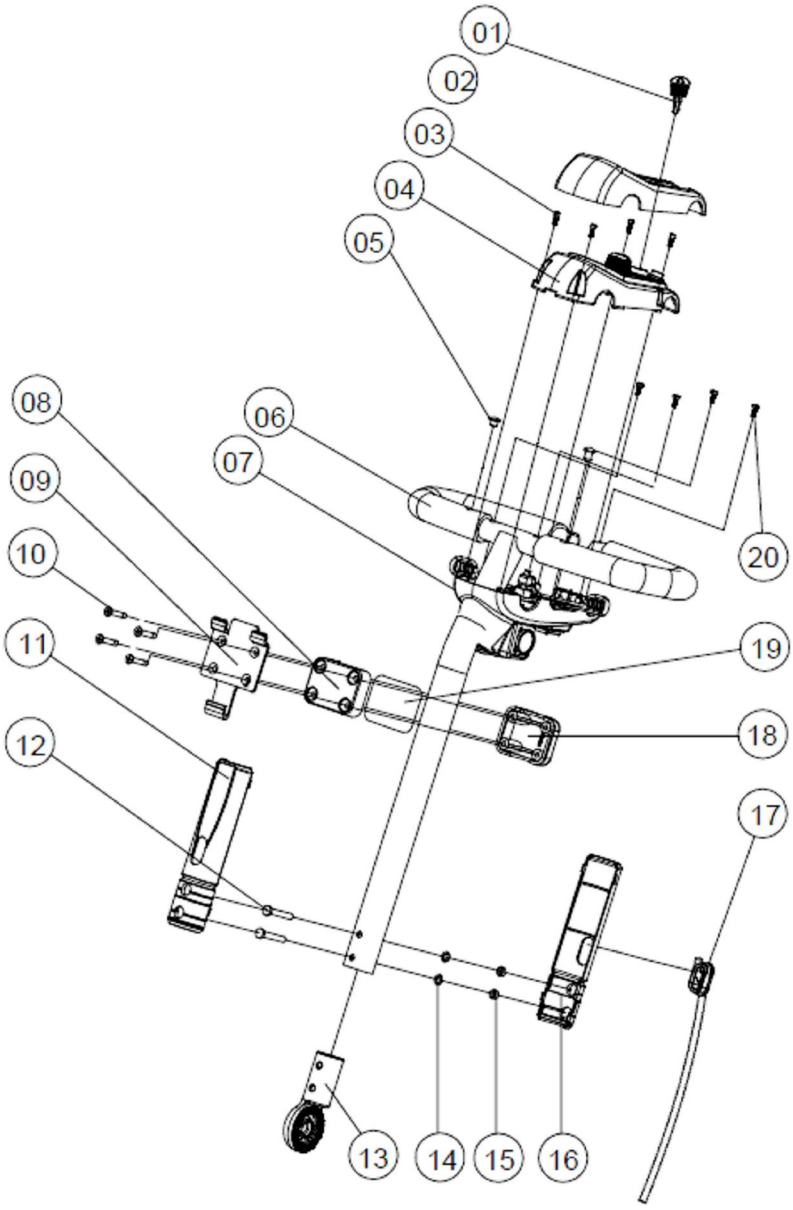
8” Front Wheel Assembly (SF01E104)

ITEM	PART NO.	DESCRIPTION	QTY
01	3090160010	Bearing, 6001-2Z	2
02	SF01A501	Wheel, 8ò	1
03	SF01E502	8ò Wheel Cover	1
04	SF01P204	Spacer	1



Frame Release Handle Assembly (SE09E104)

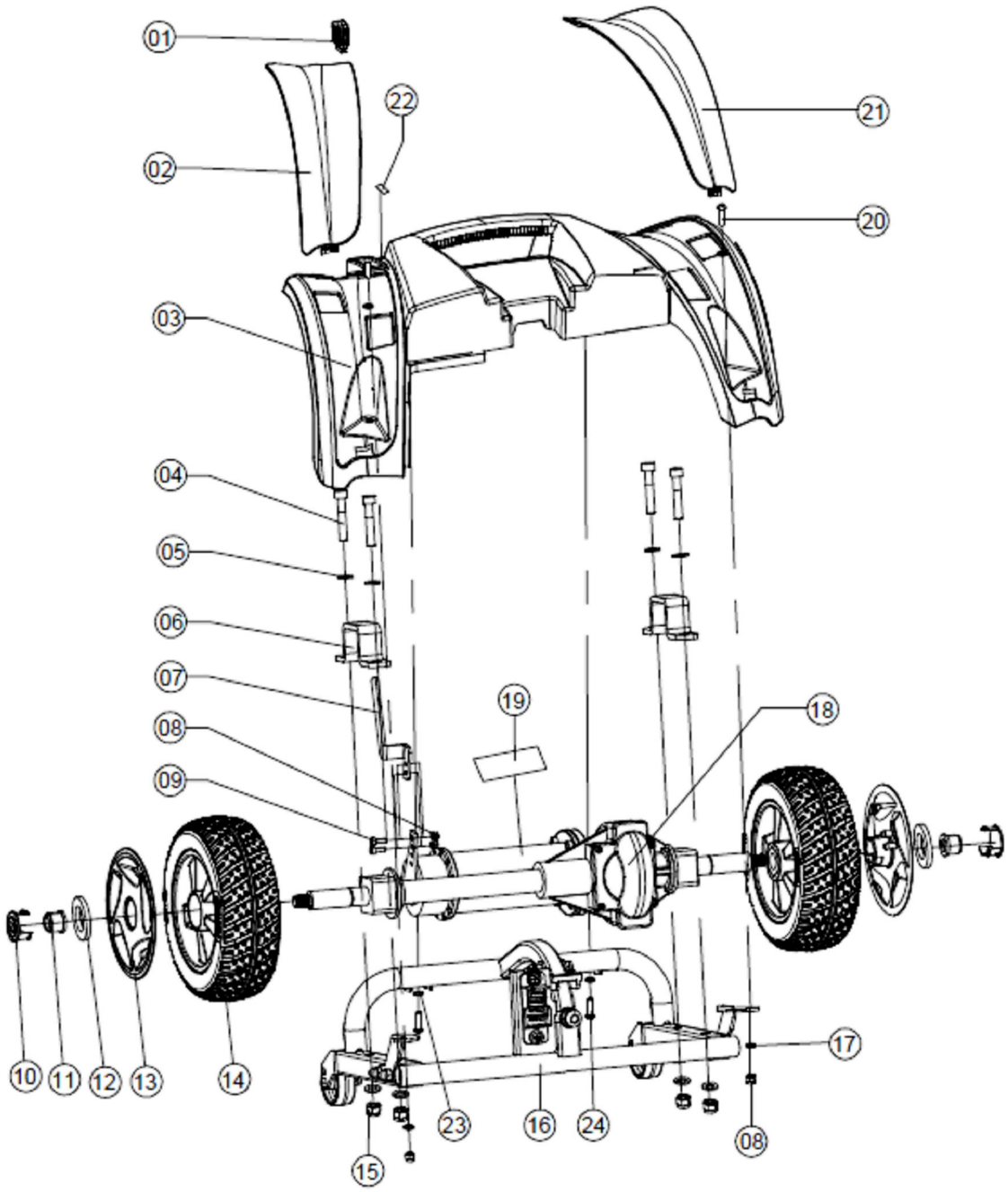
ITEM	PART NO.	DESCRIPTION	QTY
01	SE09P513	Release Handle Plastic Only	1
02	SE09A103	Release Handle Metal Only	1
03	3110904081	Screw, Phillips Pan Self Tapping ST4.2 * 16L White Zinc	4



Complete Tiller Assembly with Plastic and Wiring (SF01E201)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE06A621	Key	1
02	SE05P508	Dash Cover	1
03	3110803042	Screw, Phillips Self Tapping ST2.9 * 13L Black Zinc	4
04	SE05E602	Dash Top	1
05	SE06P221	Plug	2
06	SF01A205	Tiller Assembly without Plastic	1
07	SE05E601	Dash Bottom	1
08	SB3A503A	Front Basket Bracket Holder	1
09	SB3P119A	Basket Bracket	1
10	3111005032	Screw, Phillips M5 * 30L Black Zinc	4

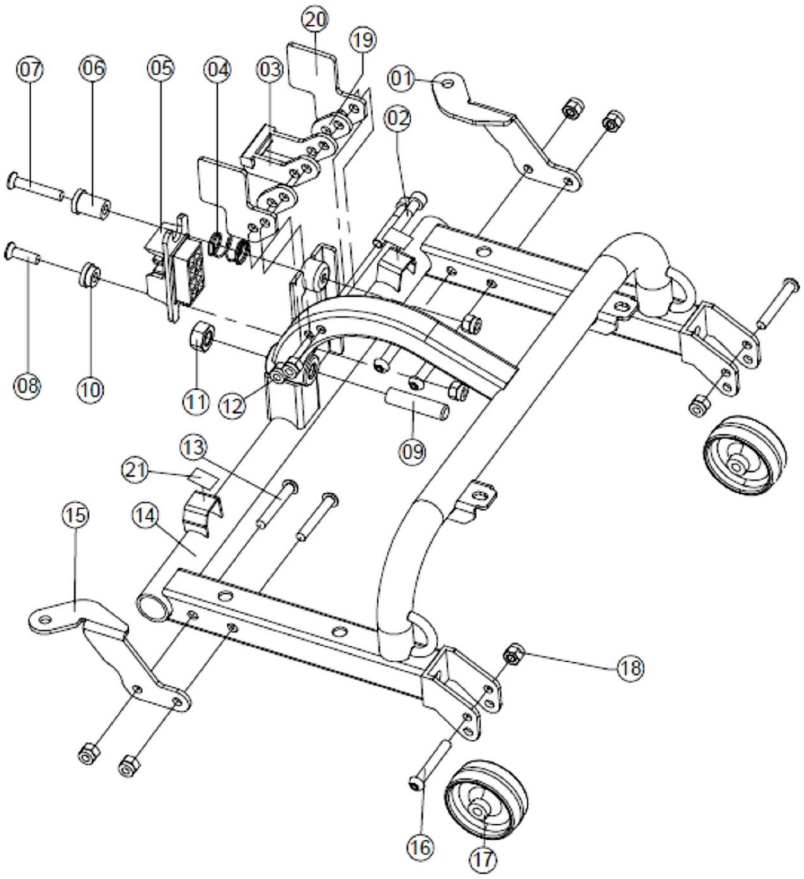
ITEM	PART NO.	DESCRIPTION	QTY
11	SA2P519A	Front Tiller Cover Black	1
12	3110306022	Screw, Hex Socket M6 * 40L Black Zinc	2
13	SE05P207	Upper Tiller Knuckle	1
14	3003106012	Washer, Spring ū 6 Black Zinc	2
15	3100306012	Nut, Nylon M6 Black Zinc	2
16	SE05P514	Rear Tiller Cover Black	1
17	SF01A602	Main Wire Harness	1
18	SB3P521A	Rear Basket Bracket Holder	1
19	SB3P133A	Rubber Pad	1
20	3110903032	Screw, Phillips Pan Self Tapping ST3.5 * 12L Black Zinc	4



Rear Parts Assembly (SE09E102)

ITEM	PART NO.	DESCRIPTION	QTY
01	WE03P510	Brake Handle Cover	1
02	SE09E503	Right Rear Colored Shroud Plastic	1
03	SE09E502	Rear Shroud	1
04	3110308042	Bolt, Hex Socket M * 45L Black Zinc	4
05	3000408042	Washer, Flat ū 8.4 * ū 16 * 1.6 Black Zinc	8
06	SB3P137A	Motor Bracket Black	2
07	SE09P127	Brake Handle Black	1

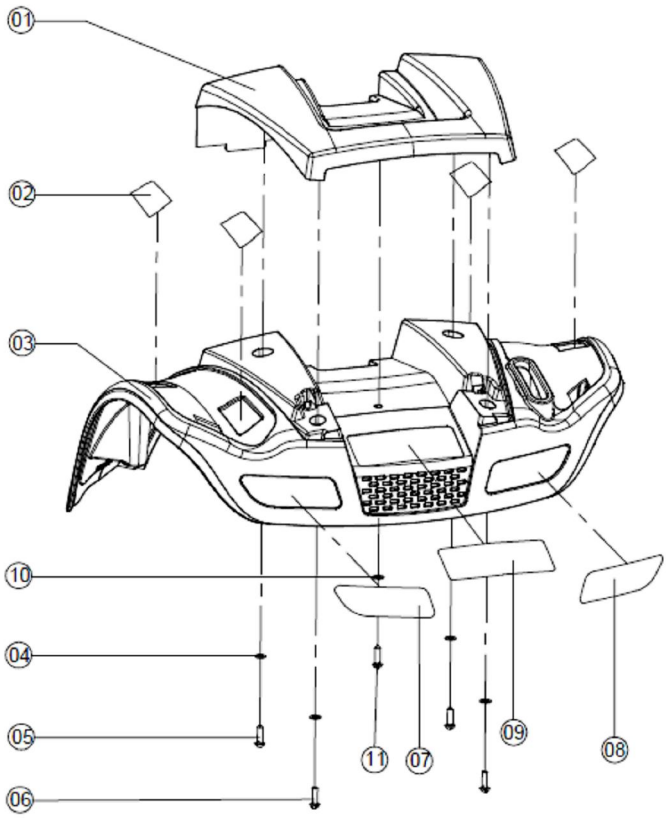
ITEM	PART NO.	DESCRIPTION	QTY
08	3100304012	Nut, Nylon M4 White Zinc	4
09	3110304012	Screw, Hex Socket M4 * 12L White Zinc	2
10	SB05P501	Cap	2
11	3100312011	Nut, Nylon M12 White Zinc	2
12	SB05P216	Gasket	2
13	SB05E501	8" Wheel Cover	2
14	SB05A203	8" Rear Wheel	2
15	3100308012	Nut, Nylon M8 Black Zinc	4
16	SE09E105	Rear Frame with Anti-Tips	1
17	3000404051	Washer, Flat ū 4.3 * ū 90 * 0.8 White Zinc	4
18	RA02E101	Transaxle	1
19	3002330030	Serial Decal	1
20	3110604091	Screw, Phillips Pan M4 * 20L White Zinc	2
21	SE09E504	Left Rear Colored Shroud Plastic	1
22	SB3P539A	Decal Brake	1
23	3000405011	Washer, Flat ū 5 * ū 10 * 1 White Zinc	2
24	3110605081	Screw, Phillips Pan M5 * 14L White Zinc	2



Rear Frame Assembly (SE09E105)

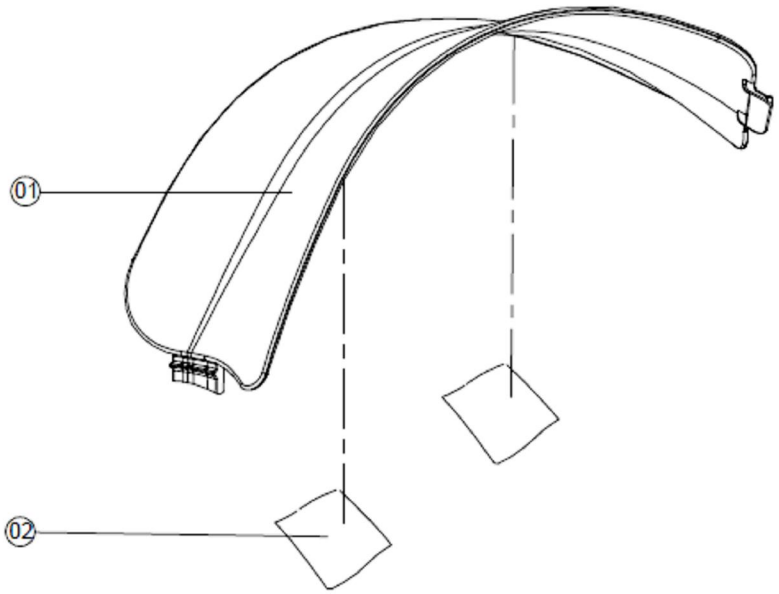
ITEM	PART NO.	DESCRIPTION	QTY
01	SE09P124	Transaxle Mounting Bracket Right	1
02	3110306092	Screw, Hex Socket M6 * 45L Black Zinc	2
03	SE09A104	Latch, Release White Zinc	1
04	SE09P128	Spring, Compression 65Mn White Zinc	1
05	SE09A602	Rear Motor Connector	1
06	SE09P530	Spacer ū 15*20L	1
07	3111006022	Screw, Phillips M6 * 30L Black Zinc	1
08	3111006052	Screw, Phillips M6 * 20L Black Zinc	1
09	3111510052	Screw, Hex Set M10 * 40L Black Zinc	1
10	SE09P531	Spacer, ū 15*7L	1
11	3100106022	Nut, Hex M10 Zinc Black	1
12	3100308011	Nut, Nylon M6 White Zinc	2
13	3110106052	Screw, Cap M6 * 35L Black Zinc	4
14	SE09A102	Rear Frame, Metal Only	1
15	SE09P131	Transaxle Mounting Bracket Left	1
16	3110106012	Screw, M6 * 40L Black Zinc	2
17	3070505010	Anti-Tip Wheel	2

ITEM	PART NO.	DESCRIPTION	QTY
18	3100308012	Nut, Nylon M6 Black Zinc	8
19	SE09P150	Washer, Black	2
20	SE09P149	Bracket	2
21	SE09P557	Decal	2



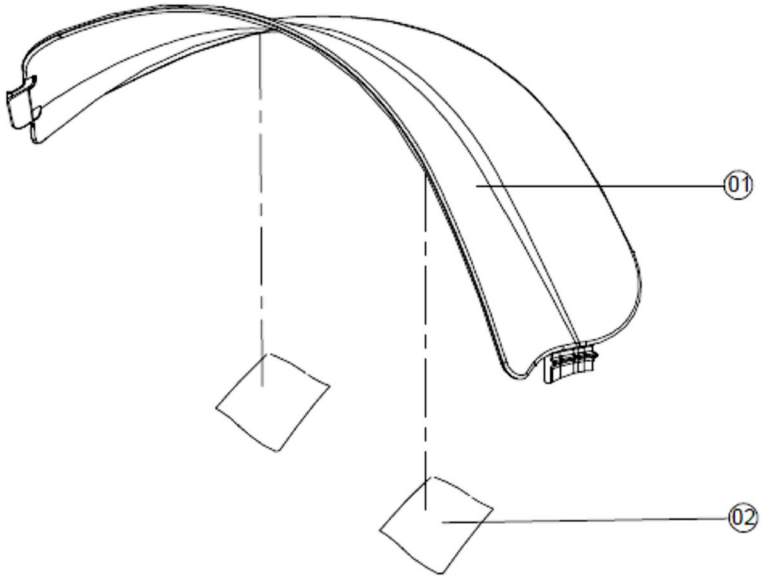
Rear Shroud with Grab Handle (SE09E502)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE09A503	Rear Grab Handle	1
02	3000325170	Velcro	4
03	SE09A504	Rear Shroud	1
04	3000405031	Washer, Flat ū 5.5 * ū 10 * 1 White Zinc	4
05	3110903031	Screw, Phillips Pan Self Tapping ST3.5 * 12L White Zinc	2
06	3110605011	Screw, Phillips Pan M5 * 12L White Zinc	2
07	SE09P550	Reflector Decal Left	1
08	SE09P552	Reflector Decal Right	1
09	SE09P551	Decal Unit	1
10	3000402021	Washer, Flat ū 2.2 * ū 5 * 0.3 Black Zinc	1
11	3110902012	Screw, Phillips Pan Self Tapping ST2.2 * 8L Black Zinc	1



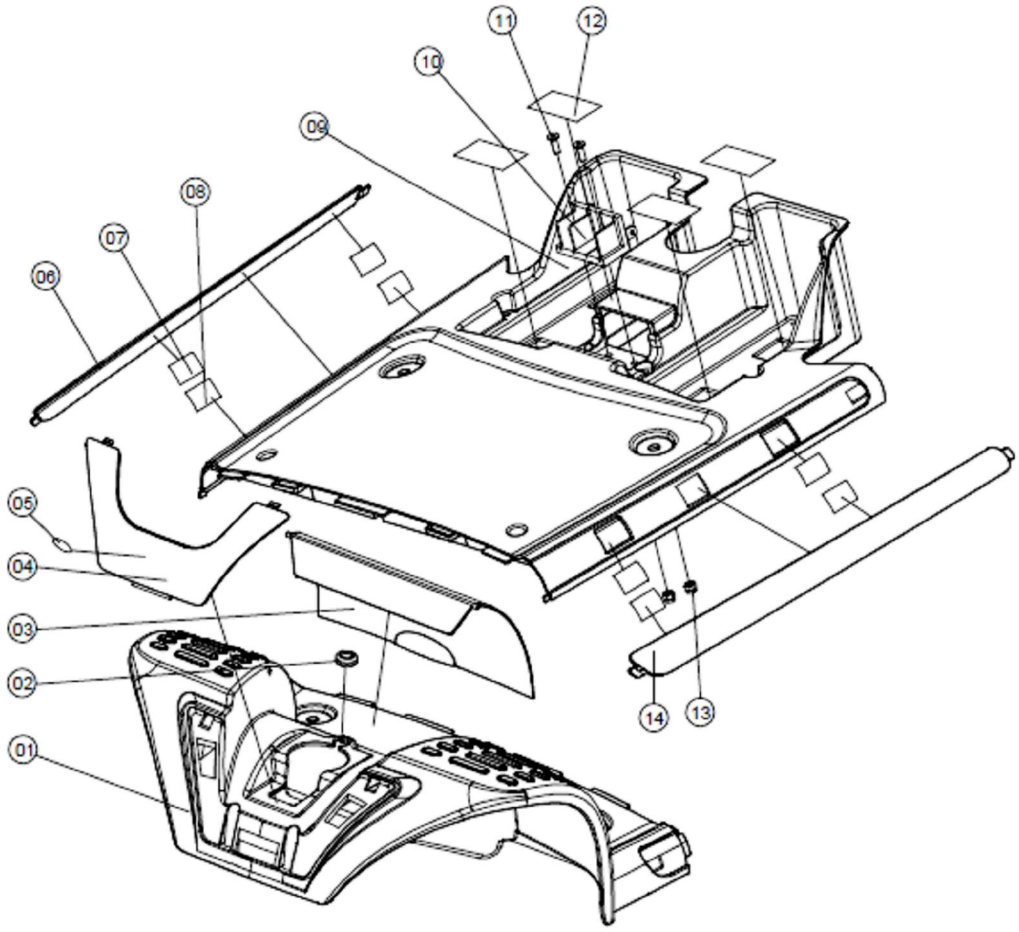
Right Rear Colored Plastic (SE09E503)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE09P510	Right Rear Colored Plastic	1
02	3000325180	Velcro	2



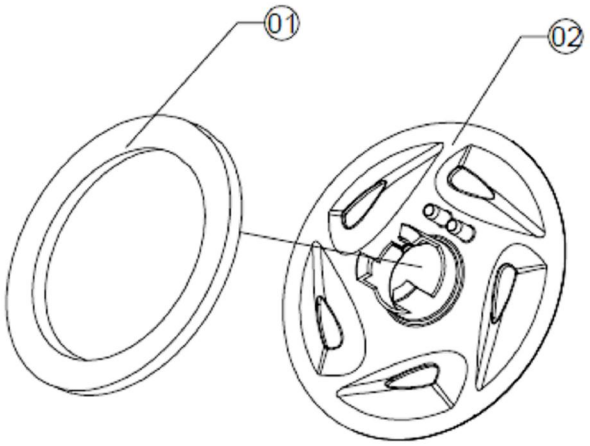
Left Rear Colored Plastic (SE09E504)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE09P511	Left Rear Colored Plastic	1
02	33000325180	Velcro	2



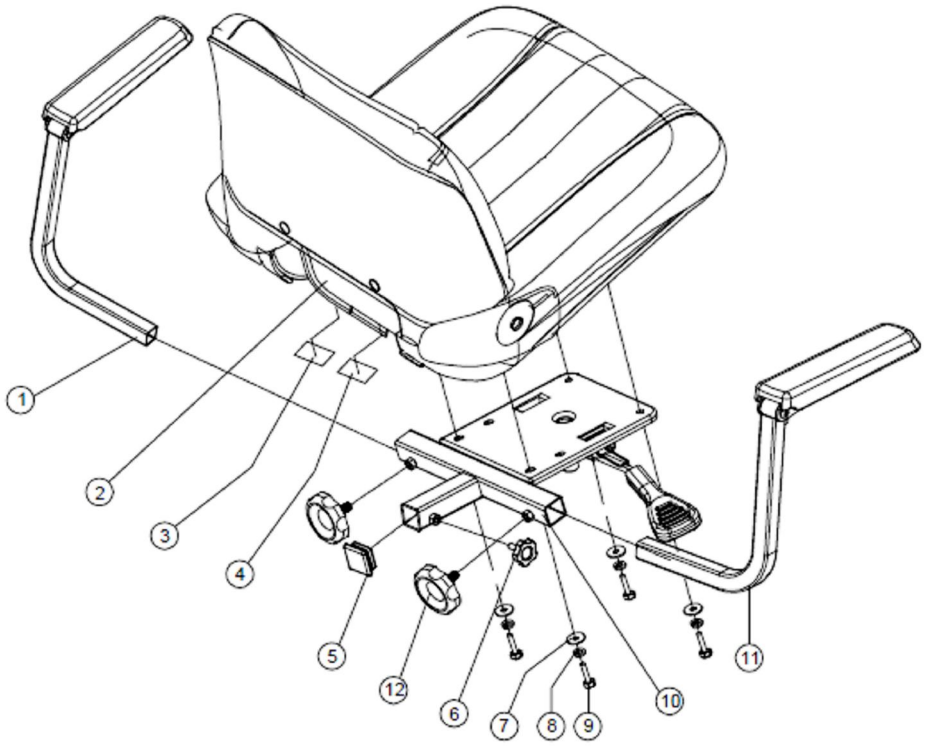
Deck Assembly Front and Mid Sections (SF01E501)

ITEM	PART NO.	DESCRIPTION	QTY
01	SF01P501	Front Deck	1
02	SF01P506	Spacer	1
03	SF01P505	Door, Cargo	1
04	SSF01P502	Front Deck Colored Plastic	1
05	SD01P550	Decal	1
06	SE09P514	Right Colored Plastic Deck Piece	1
07	3000325180	Velcro	4
08	3000325170	Velcro	4
09	SE09P502	Mid Deck Black Plastic Only	1
10	SE09A601	Battery Connector	1
11	31110050852	Screw, Hex M5 * 16 Black Zinc	2
12	SE09P541	Pad	4
13	3100305012	Nut, Nylon M5 Black Zinc	2
14	SE09P515	Left Colored Plastic Deck Piece	1



8" Front Wheel Cover with Ring (SF01E502)

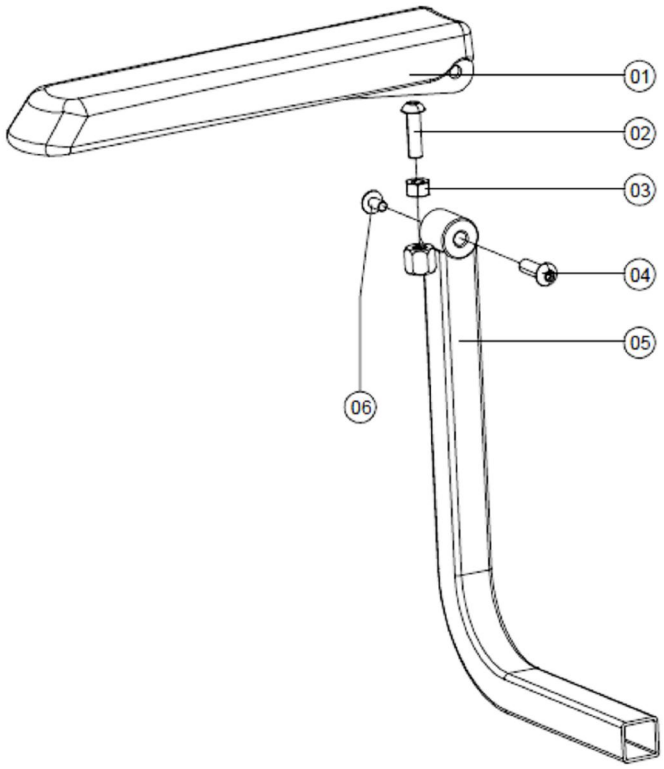
ITEM	PART NO.	DESCRIPTION	QTY
01	3003610010	Gasket	1
02	SF01P511	8" Front Wheel Cover without Gasket	1



Seat Assembly with Arms (SB05E401)

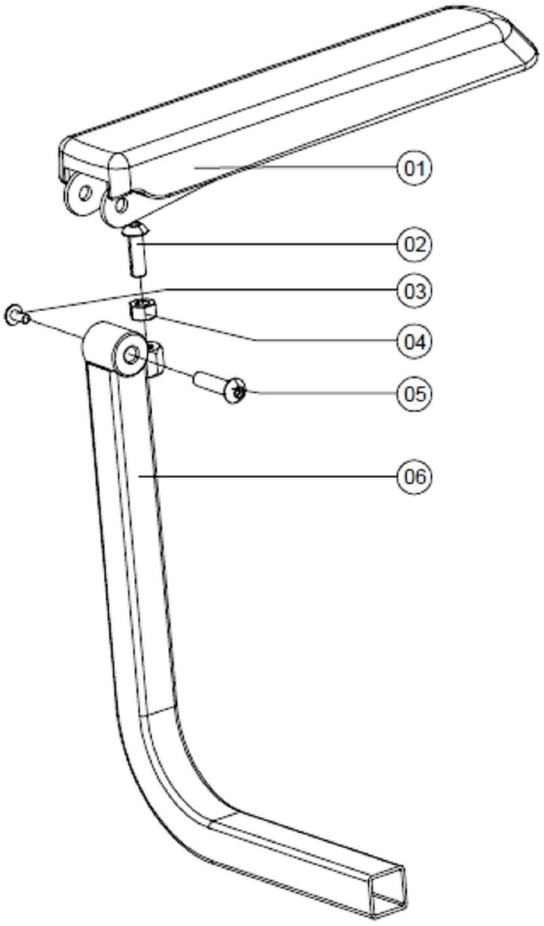
ITEM	PART NO.	DESCRIPTION	QTY
01	WC6E401A	Left Arm Assembly	1
02	WWS61E100	Seat 17ò Raw	1
03	3002300020	Fire Decal	1
04	3002300030	Seat Material Decal	1

ITEM	PART NO.	DESCRIPTION	QTY
05	WC9P453A	Plug	1
06	3111308020	Accessory Knob	1
07	3000406032	Washer, Flat Ø8.4 * Ø24 * 2 White Zinc	4
08	3003108011	Washer, Spring Ø8 White Zinc	4
09	3110408081	Bolt, Hex M8 * 25 White Zinc	4
10	SE1E403B	Seat Swivel Assembly	1
11	SB05E402	Right Arm Assembly	1
12	WC9P401A	Arm Width Adjustment Knob	2



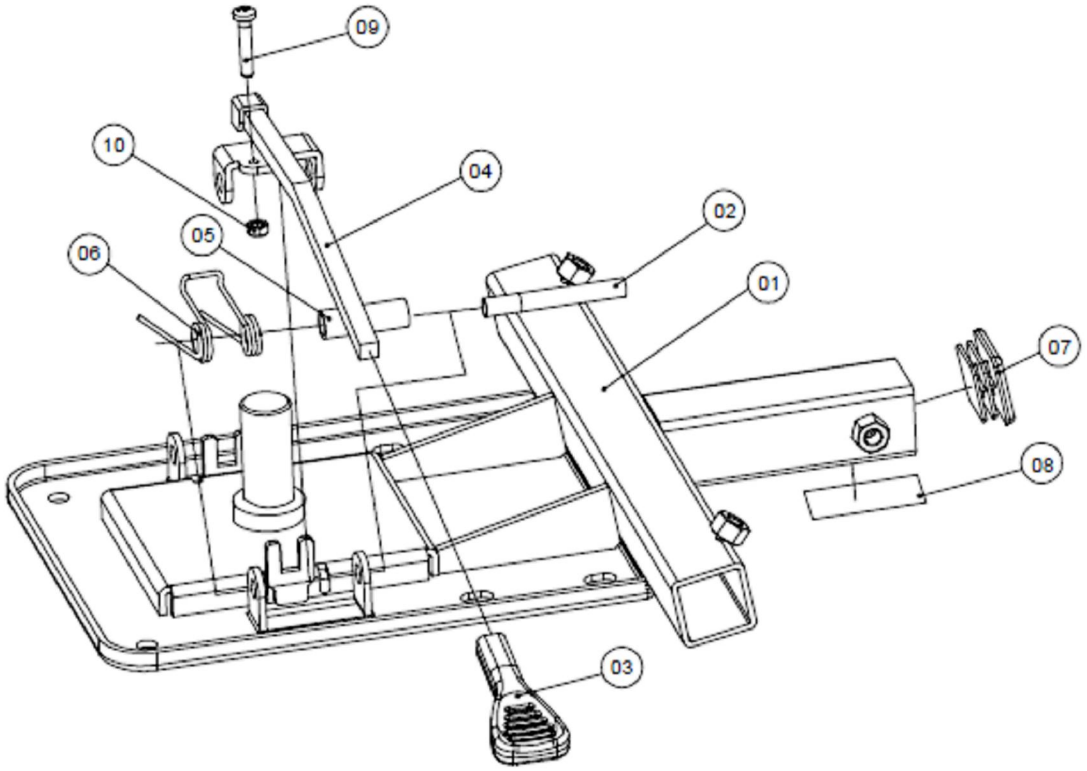
Right Arm Assembly (SB05E402)

ITEM	PART NO.	DESCRIPTION	QTY
01	WC6A405A	Arm Pad	1
02	3110308072	Large flat head cap screw M8 * 30L Black Zinc	1
03	3100108012	Hex Nut M8 Black Zinc	1
04	3111706052	Screw, Ø8/M6 * 33L Black Zinc	1
05	WC6A401A	Right Arm Tube	1
06	3110106032	Screw, Cap M6 * 12L Black Zinc	3



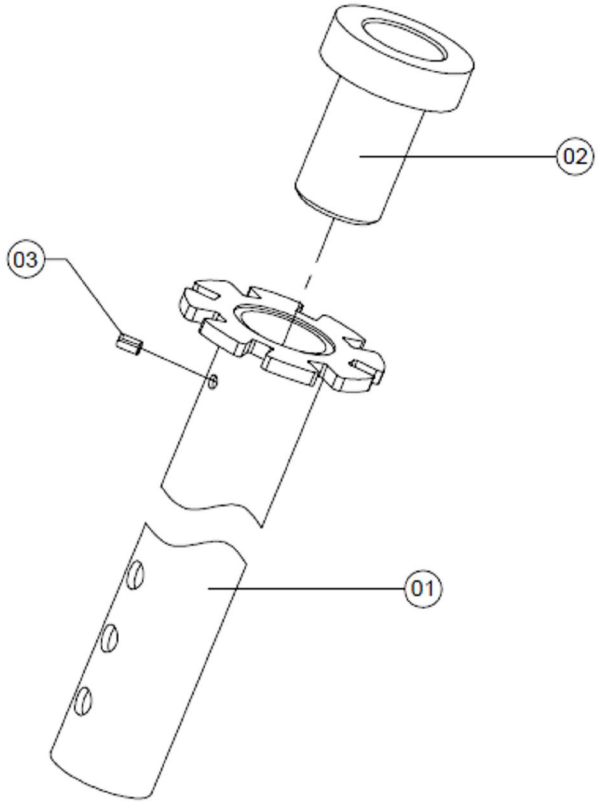
Left Arm Assembly (WC6E401A)

ITEM	PART NO.	DESCRIPTION	QTY
01	WC6A405A	Arm Pad	1
02	3110308072	Screw, Cap M8 * 30L Black Zinc	1
03	3110106032	Screw, Cap M6 * 12L Black Zinc	1
04	3100108012	Nut, Hex M8 Black Zinc	1
05	3111706052	Screw, Ø8/M6 * 66L Black	1
06	WC6A402A	Left Arm Tube	1



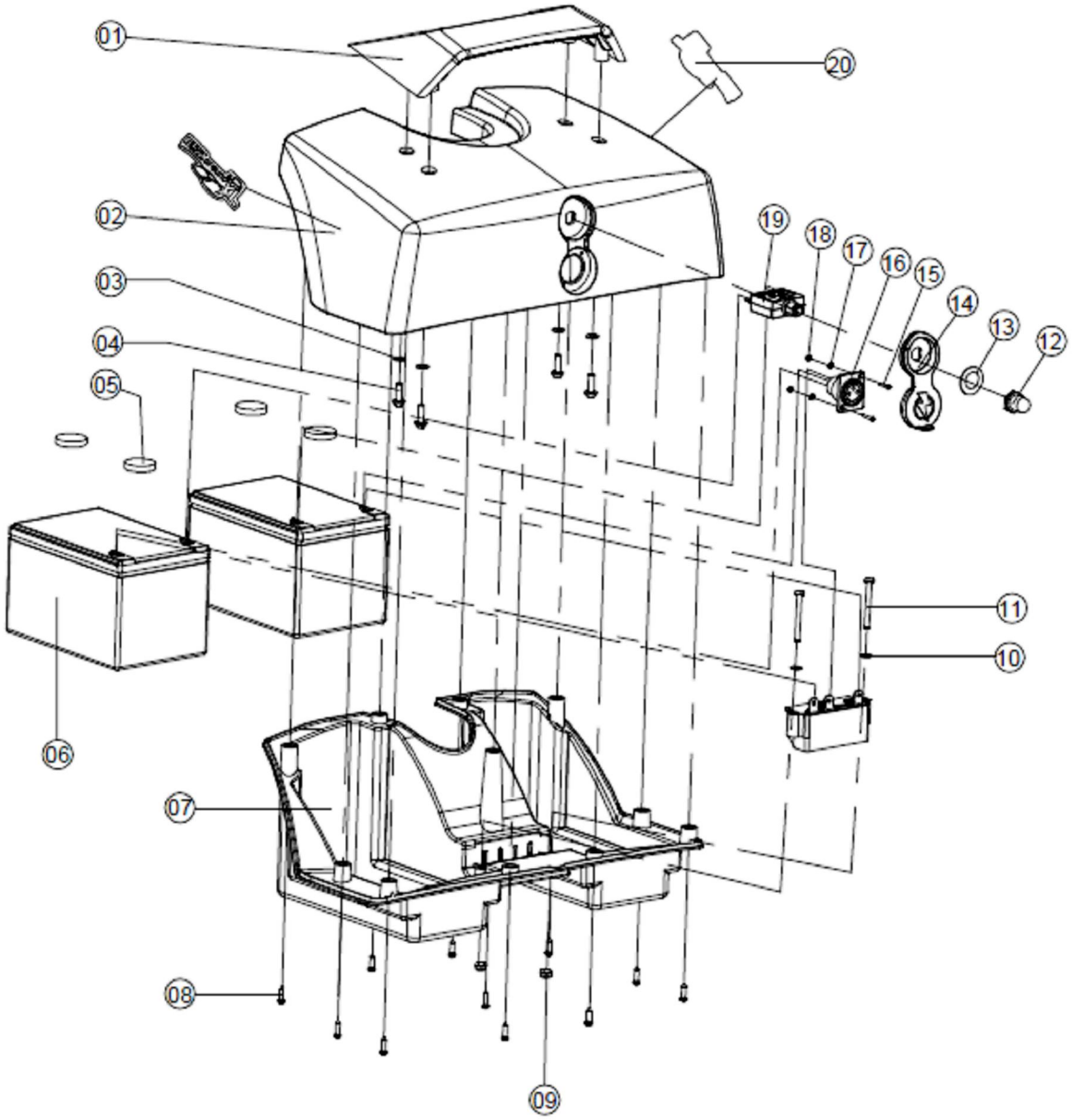
Seat Swivel Assembly (SE1E403B)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE1A401B	Seat Swivel Plate Only	1
02	3000608012	Pin, Spring ∧ 8 * 63.5 Black Zinc	1
03	SE1P530A	Paddle Style Push Down Handle Cover	1
04	SE1A404B	Seat Swivel Lever	1
05	SE1P413B	Spacer	1
06	SE1P424A	Spring, Double Torsion ű 2.5 Black Zinc	1
07	WC9P453A	Plug	1
08	SE1P529A	Decal	1
09	3110605092	Screw, Phillips Pan M5 * 35 Black Zinc	1
10	3100105012	Nut, Hex M5 Black Zinc	1



Seat Post Assembly (SE09E401)

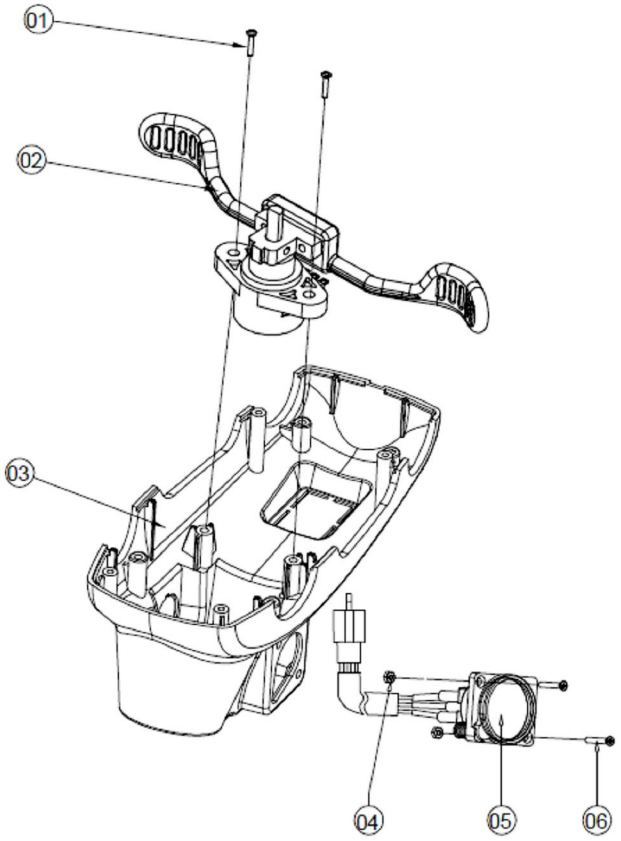
ITEM	PART NO.	DESCRIPTION	QTY
01	SE09A401	Seat Post Metal Only	1
02	SA2P419A	Seat Post Insert	1
03	3000604022	Pin, Spring ū 4 * 6L Black Zinc	1



Battery Box Assembly with Grab Handle (SE09E601)

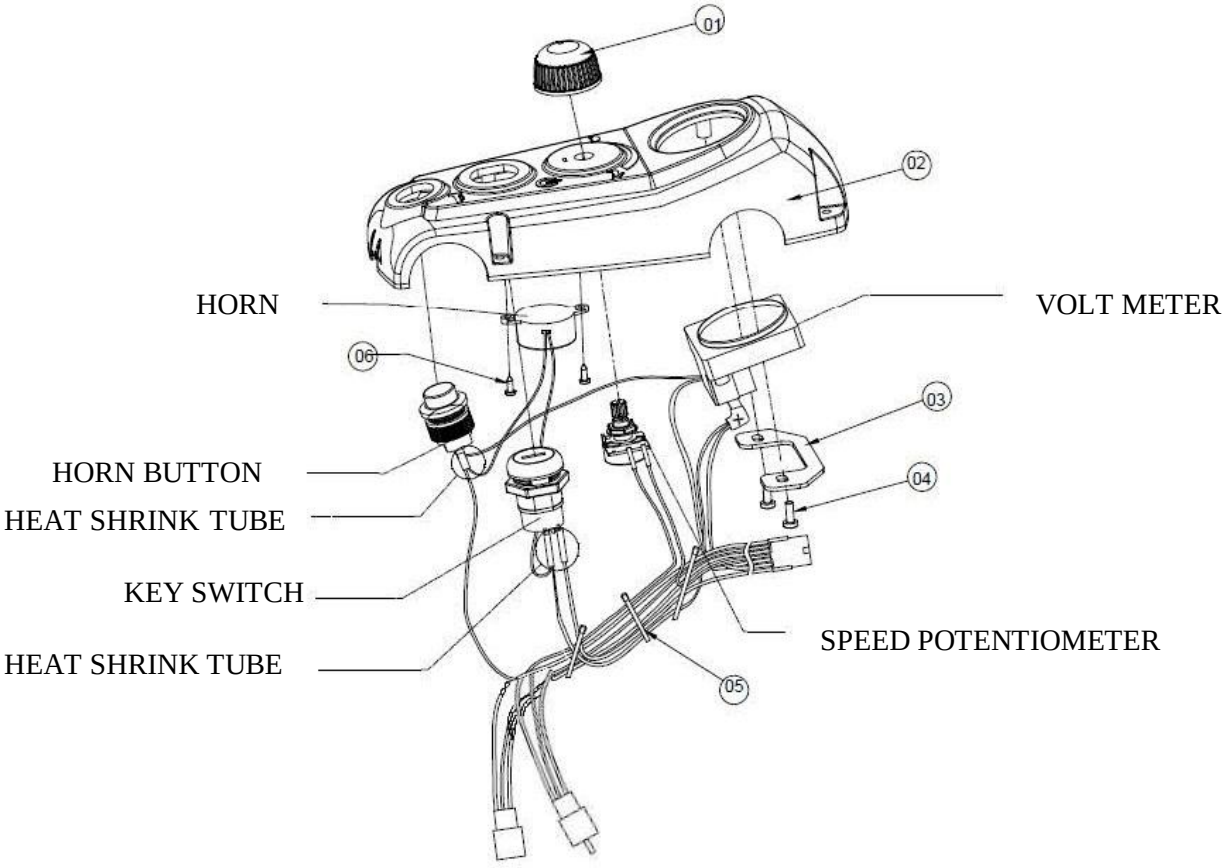
ITEM	PART NO.	DESCRIPTION	QTY
01	SE09A505	Battery Box Handle	1
02	SE09P503	Battery Box Cover	1
03	3000404031	Washer, Flat ū 4 * ū 8 * 0.8 White Zinc	4
04	3110604011	Screw, Phillips Pan M4 * 12L White Zinc	2
05	SE09P540	Pad	4
06	3052512010	Battery, 12V * 12AH	2
07	SE09P504	Battery Tray	1
08	3110903111	Screw, Phillips Self Tapping ST3.5 * 16L White Zinc	11
09	3100304011	Nut, Nylon M4 White Zinc	2
10	3000404041	Washer, Flat ū 4.3 * ū 8 * 0.5 White Zinc	2

ITEM	PART NO.	DESCRIPTION	QTY
11	3110604061	Bolt, Phillips Pan M4 * 40L White Zinc	2
12	3100511010	Circuit Breaker Cover	1
13	3000411010	Gasket	1
14	SE09P518	Charger Port Cover	1
15	3110602022	Bolt, Phillips Pan M2.5 * 12L Black Zinc	1
16	SE09A605	Charger Port	1
17	3000402022	Washer, Flat ū 2.7 * ū 6 * 0.5 Black Zinc	2
18	3100102022	Nut, Hex M2.5 Zinc Black	2
19	SE09E603	Circuit Breaker	1
20	SE09P553	Buzz XL Decal	2



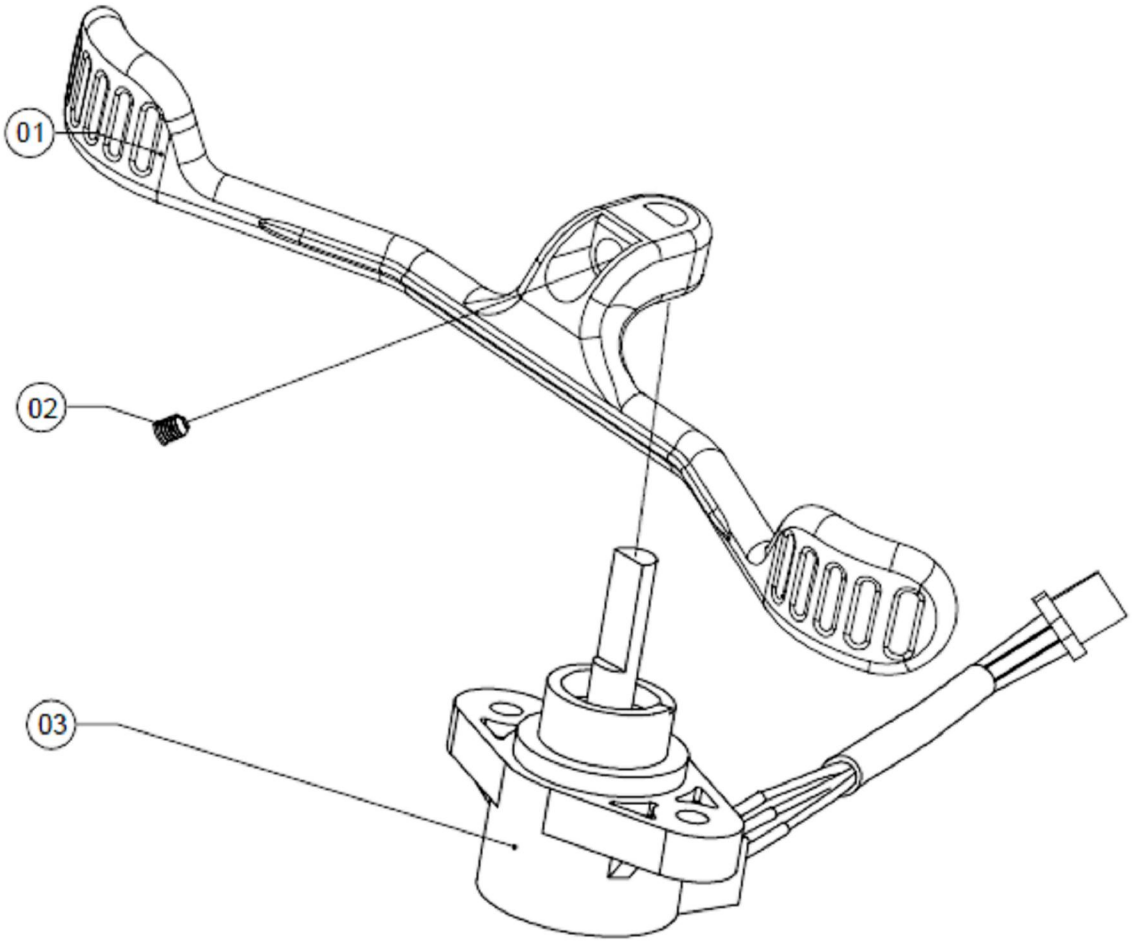
Lower Dash Assembly (SE05E601)

ITEM	PART NO.	DESCRIPTION	QTY
01	3110103031	Screw, Phillips Self Tapping ST3.5 * 16 White Zinc	2
02	SE05E603	Paddle Assembly	1
03	SE05P519	Lower Dash Plastic Only	1
04	3100102022	Nut, Hex M2.5 Black Zinc	2
05	SE05A612	Charger Port	1
06	3111002022	Screw, Phillips M2.5 * 12L Black Zinc	2



Upper Dash Assembly (SE05E602)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE06P511	Speed Control Knob	1
02	SE05P509	Dash Top Plastic Only	1
03	SB3P608A	Volt Meter Bracket	1
04	3110103011	Screw, Phillips Self Tapping ST2.9 * 8 White Zinc	2
05	SE05A601	Dash Wire Harness	1
06	3110902012	Screw, Phillips Pan ST2.2 * 8 Black Zinc	2



Paddle Assembly (SE05E603)

ITEM	PART NO.	DESCRIPTION	QTY
01	SE05A502	Plastic Paddle Only	1
02	3111504022	Screw, Hex Set M4 * 6L Black Zinc	1
03	SE05A602	Potentiometer	1

Model GB146

Model GB116

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